Home computing WEEKLY

An Argus Specialist Publication

July 12-18, 1983 No. 19

38p

INSIDE

Behind the scenes at English Software

Great games to type in for: TI-99/4A, Spectrum, Dragon, ZX81

Software reviews for: Lynx, TI-99/4A, VIC-20, BBC, Atari, Oric, Dragon, Jupiter Ace, Spectrum

Create more characters with your VIC-20 Drawing with the Oric

Best sellers: charts for VIC-20, ZX81, Spectrum, Dragon

CRASH FAKED IN SPECTRUM RAID

COMPUTERS have been fished out of the Thames — days after armed raiders got away with a £390,00 haul.

They staged a car crash to lure the security guard from a London warehouse.

He was inside the TNT warehouse, on the Cranford Lane Industrial Estate, Hornsey, chatting to the estate manager when they heard a crash outside.

A car with a girl at the wheel and a main passenger had crashed into dustbins.

The two men went to their aid — and found themselves facing a shotgun and a handgun held by two other raiders who had been waiting nearby.

One of them said: "Blow them away...it will save time later."

In fact no shots were fired and, as the car drove off at high speed, the guard and the manager were forced back into the warehouse.

They were made to get into the back of a truck which was then reversed against a wall, trapping them.

Meanwhile the three robbers loaded up two other TNT trucks with computers — mostly 48K Spectrums in boxes of 10, plus ZX81s and some software. The trucks, both orange coloured Ford Cargos, were later found abandoned.

The two trapped men shouted and banged on the sides of the truck until they were heard by passers-by and released.

The haul, worth £390,000, belongs to Prism, Sinclair's sole distributor in this country. It was

Continued on page 3

New Ataris — See inside

An amazing collection of exciting games for VIC20 and ZX Spectrum —

Spectrum games

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Home Computing WEEKLY

News 5,7,9

TI-99/4A program 11
Save Miss Muffet from the spider

Software reviews 13
Programs that teach you to put two and two together

Software reviews 14
Versions of the classics

Spectrum program 17
The fate of the fleet depends on you

Dragon program 21
Prepare those plasma bolts

Software reviews 23
These games are all up in the air

VIC-20 programming 25
Reformed characters

Software reviews 29
Messing about with your micro

Oric-1 programming 30
You too can be quick on the draw

Spectrum software reviews . . . 33
Aliens on the warpath

VIC-20 software reviews 35
New games you could play

ZX programs 36
Train your brain

Best sellers 38

U.S. Scene 38

Letters 41

Profile: English Software 43

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Continued from front page

in the warehouse awaiting despatch to retailers throughout the country.

Prism's deputy managing director Terry Brown said: "It means there won't be as many retailers holding stocks as there could be.

"We have got to try and get extra stocks so we won't build up a lead time. My advice to customers is to shop around or go back to the store later."

He said: "They loaded up the lorries very inefficiently. They left at least 2,000 computers behind when they could have taken everything that was in the warehouse."

Prism, which was insured for the loss, distributes to most UK retailers, excluding a handful of large chains, like W.H. Smith, Greens and John Menzies, which are supplied direct by Sinclair Research.

Five days later £1,730 worth of computers were found submerged in the Thames in Buckinghamshire by two boys out fishing.

There were 13 Spectrums, a ZX81 and a single power pack in two plastic bags. All were ruined.

Police are checking to see if there is any connection and an officer said: "Things are developing."

The Oric collection

Home Computing Weekly contributor Vince Apps has just brought out a collection of programs to keep Oric owners busy.

The Oric-1 Program Book contains 50 program listings which, according to the publishers, will allow those dedicated enough to type them all in to run an obstacle course, protect six cities from missile attack, save a maiden from a dark knight, draw graphs, weave webs, have a firework display, peek into the Oric's memory...

The book costs £6.50 direct from the publishers.

Phoenix Publishers, 14 Vernon Road, Bushey, Herts

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Dragon crosses the ocean

The Dragon-32, which was launched in the UK only last August, is now to be sold across the Atlantic.

Dragon Data has just signed an agreement with New Orleans-based company Tano to market the Dragon in the USA, Central and South America and the Caribbean.

Dragon Data, Kenfig Industrial Estate, Margam, Port Talbot, West Glamorgan

Cartridge price cuts

The retail price of Thorn EMI software cartridges for the VIC-20 and Atari 400/800 micros can be expected to fall, now that Thorn has cut the price it charges dealers.

Cuts of £5 per cartridge on the trade price will probably mean that retail prices will fall to under £30.

Thorn EMI, Upper Saint Martin's Lane, London WC2H 9ED

LATE NEWS

Oric joins price cutters

Price of both Oric computers have been slashed. The 48K model has been cut by £30 to £139.95, and the 16K version returns to its launch price of £99.95. Oric said that 80,000 Oric-1s have been sold in the UK and Europe, and a TV campaign was starting.

Buyers will also get a £40 voucher towards the cost of the Oric four colour printer plotter.

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THE TOP 6 SCORERS AT THE END OF JUNE ARE:

RUSSELL CAPEL	2530	IAN GARLINGE	1847
MRS K. BURNETT	2019	STEVE EDWARDS	1670
DAVID BAXTER	1998	T SWIFT	1513

Atari games for other computers

Atari is coverting its computer games to run on other micros, starting with cartridges for the TI-99/4A, VIC-20 and Commodore 64.

The first three — Pac Man, Centipede and Defender — will be on sale by the end of the year. More Atari cartridges are also due out soon.

Steve Gerber, 37, Atari's European software development director, who has just arrived at the company's UK base in Slough, explained the new policy.

He said: "It was the Warner Corporation (Atari's owners, who made the final decision. We had been trying to persuade them to do this for some time.

"After all, if you're good at making software, why limit yourself to one machine?"

But would this mean people may choose to buy other computers? Mr Gerber said: "If you found the best software for, say, the VIC, was from Atari, would you not just buy the Atari?"

More adaptions would be coming for the BBC micro, Dragon and the Spectrum, all on tape instead of cartridges.

He said: "We are also about to launch a UK product written by a UK author. This kid just walked in the door with a dynamite game."

The Software Publishing Group was also on the lookout for more UK-written software which would, if suitable, be marketed in America as well as other countries where Ataris are sold.

New software for cartridges due out this year:

● Pole Position, a grand prix motor racing game costing £29.99 and on sale in September

Janice Gash, 25, with the new 800XL home computer from Atari

● RealSports Tennis, in the ships this month, uses the same rules as real tennis — and the players even change ends after games. Price: £19.99

● AtariWriter, a word processing program which, says Atari, offers features usually found in expensive software.

● Games for children based on Walt Disney characters and cartoon films

Atari also showed its new computes and peripherals for the first time in the UK. Prices have not yet been decided, but they are due here this year.

Details were in last week's Home Computing Weekly, but they included the 16K RAM 600XL and 64K 800XL home computers. They are compatible with existing software and, unlike the present models, have BASIC built in. The top of the range 1450XLD, which is to go on sale here next year, has a built-in dual density, double sided 5¼in disc drive.

Other new products include three printers — the 1020, using ballpoint pens in 4½in paper rolls; the 1025 80-column dot matrix printer; and the 1027 letter quality printer running at a claimed 20 characters per second.

There is also a re-styled 1010 program recorder, 1050 disc drive, a module for the CP/M 2.2 operating system — used for much business software — which also adds 64K of RAM and switchable 40 or 80 column video output, and a box called The Expander with slots for eight expansion cards and two RS-232C and one Centronics interface.

The Expander for the new XL computers only is designed to accept products from other manufacturers.

Atari's new 600XL computer

Fire bugs cause £10,000 damage

Fire-raisers caused a £10,000 blaze at a leading software and add-on company. And one theory is that they were teenagers angry at not finding any money.

The man who called the emergency services — a quantity surveyor working late in an adjoining office — has been thanked with a bottle of Scotch and the offer of a free meal.

The gift was from Roy Backhouse, managing director of Fuller Micro Systems, based in central Liverpool.

Mr Backhouse said: "Police think it was teenagers looking for money. They smashed the front window to get in at about midnight on Saturday.

"They couldn't find any money — so they set fire to the place. The fire brigade believe they set fire to a wastepaper basket."

Among the property, all insured, which was damaged was software, desks and files. A printer and a terminal were damaged by smoke, but the company's ICL computer was on another floor and not affected.

All 14 people employed by Fuller worked over the weekend to ensure orders were kept up to date.

Mr Backhouse said: "Even though we managed to salvage a lot of test gear it still stinks of smoke.

"It's an absolute pain that anyone could be so senseless. There was a lot of blood, so they must have cut themselves getting in.

"We probably would have lost the whole place but for a guy working late who heard the glass being broken and called the police."

The fire affected only the ground floor of Fullers, which includes showroom, reception area and repairs and servicing.

Microdrives 'imminent'

The launch of the long-awaited Microdrives mass storage devices is now imminent, according to a Sinclair Resarch official.

Sinclair has said little about the Microdrives, except that they are likely to cost around £50 and will need an interface

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ZX computing US-style

The ZX81 and Spectrum that we all know and love have undergone a dramatic transformatin on their way to the USA.

The ZX81 becomes the Timex Sinclair (TS) 1500, and features a silver case, Spectrum-like keyboard and 16K of RAM built in all for around £45.

Timex also sells mini-cartridges to plug into the expansion slot at the back of the machine.

The 48K Spectrum becomes the TS2048. It too has a silver case, plus a special compartment for cartridges and a hole in the side for a joystick.

It has five new commands: ON ERROR GOTO; RESET; FREE, which tells you how much memory is left; STICK, which controls the joystick; and SOUND, which activites a three-channel synthesiser.

And the TS2048 can also switch into a second graphics mode giving 64 characters per line. It's selling for the equivalent of around £135.

The X81 plus...

...And there's a 48K Spectrum in there somewhere

A to Z of software

When you've been from Arcadia to Zip Zap and Zzoom, what do you do for an encore? The two Zx are the titles of Imagine's first two games for the 48K Spectrum, and they'll be in the shops soon.

Zip Zap puts you in control of a defective robot, trying to gain the safety of a Tele Portal in the face of opposition from waves of aliens.

Its author is a new arrival at Imagine, Ian Weatherburn, who joined the company in April. But Eugene Evans' position as 17-year-old programming prodigy is safe — Ian is all of 19.

Zzoom is a game with a more familiar theme — rescuing marooned refugees from an enemy intent on wiping them all out. It was written by the grand old man of the company, 36-year-old John Gibson, author of Molar Maul.

Artistic advice on the games was provided by Gary McNamara, 18, and Steve Blower, 33, from Imagine's very own studio, Studio Sting.

Both games will be packaged in Imagine's new-style cassette boxes. Not only that, but the *Zzoom* boxes even have a Latin inscription — Nomen Ludi, or "the name of the game" to you. They'll sell for £5.50, like the rest of Imagine's range.

But there's no need to feel inferior if you don't understand Latin — neither does Imagine. The motto was translated for them by the Classics department at Merchant Taylors' School, Liverpool.

And the answer to the original question could be that the company plans to start again from A. Launched along with Zip Zap and *Zzoom* is a version of Arcadia for the Commodore 64, re-written and enhanced by Eugene Evans himself.

Imagine, Masons Buildings, Exchange Street East, Liverpool L2 3PN

Raider upgrader

Arcade Software says that Raider of the Cursed Mine, the Spectrum game it launched at the Earls Court Computer Fair, met with such a good response that it's now bringing out a new improved version.

This version, which was being duplicated at the end of last week, will have grade difficulty levels and the option of joystick control.

And if you manage to get past level 30 and escape from the mine, you'll be rewarded with a picture of the outside world — complete with moon, stars, trees and a house.

Anyone who bought the earlier version of Raider can exchange it for the new one.

Arcade Software, Technology House, 32 Chiselhurst Road, Orpington, Kent BR6 0DG

You could be on our pages

We welcome programs articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

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Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE

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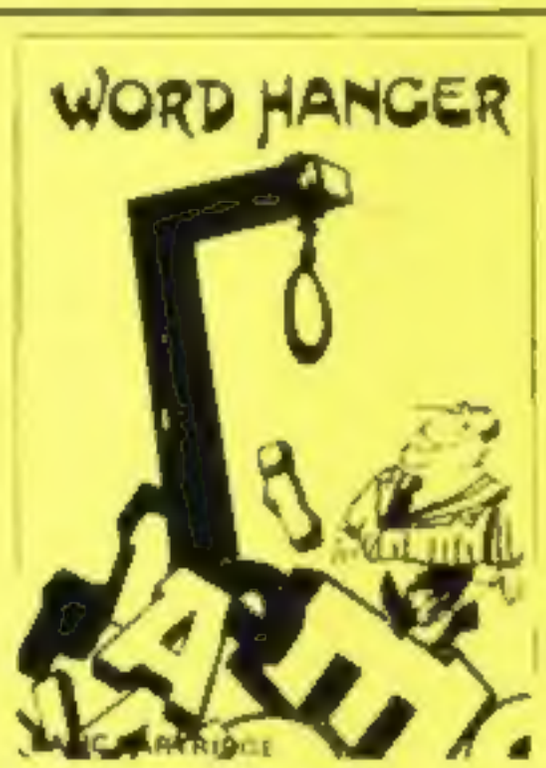

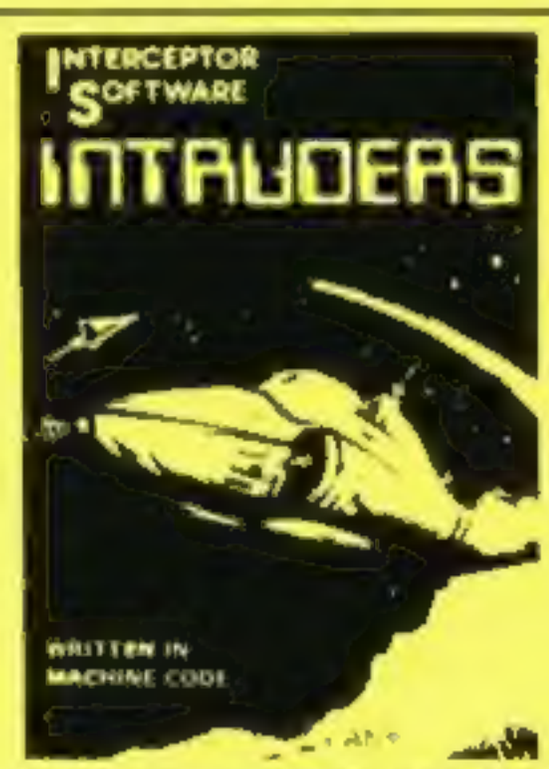

2 NEW GAMES FOR YOUR ATARI 400/800–16K

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Is your family starting to complain about your micro and its accessories taking over the living room? The Micro Tidy from Abacus is designed to get you back in their good books.

It comes in two models, to sit on a desk or stand alone, and has lockable compartments for micro and cassette recorder, cassettes, manuals and cables. The television stands on top.

The basic version costs £60 and the free-standing version costs £80.

Abacus Marketing, Abacus House, 60 Barcourne, Worcester WR1 1JA

The Micro Tidy tidies up your micro

ZX computers get a voice

You may not be able to talk to your ZX81 or Spectrum, but it will at least be able to talk to you, using the ZXS Speech Synthesiser from Timedata.

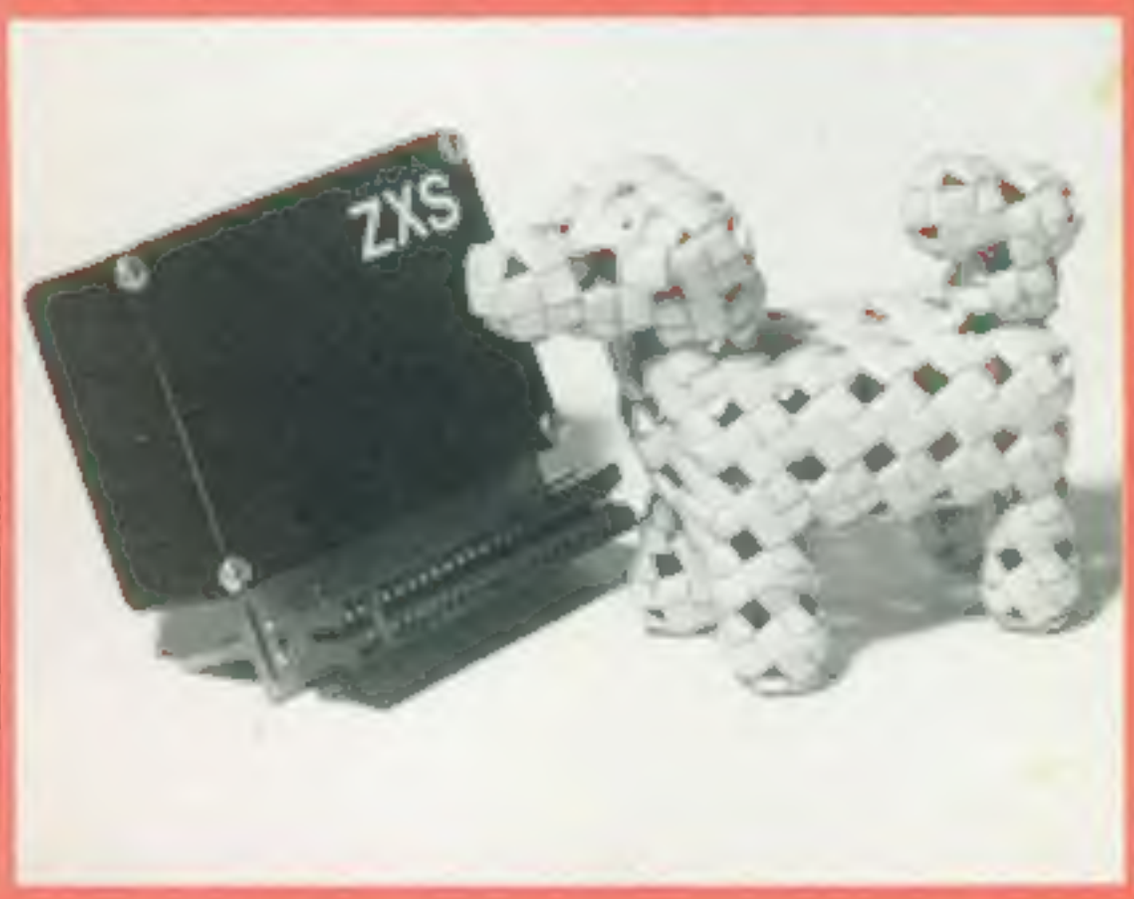
At the heart of the ZXS is the SP-0256 chip, which produces basic speech sounds called allophones. The ZXS can be programmed to combine these allophones to produce a wide range of English words and some foreign ones.

The result can be fed either to a normal audio amplifier, or to the loudspeaker in a sound box such as Timedata's ZXM.

Looking rather like a 16K RAMpack, the ZXS has an edge connector to allow other devices to be piggybacked on to it.

Timedata reckons that at £32.50, it's the cheapest synthesiser around.

Timedata, 16 Hemmells, High Road, Laindon, Basildon, Essex SS15 6ED



Timedata's ZXS — voice for ZX computers

Give micro addicts a fair dealer

It's a hard life being a computer addict. You sit at home typing, or reading specialist magazines like this one, and then — you spot an ad for a new computer shop near your home.

Excited at the prospect of trying out that new joystick, or that new game with the super smooth graphics, or just a chat with a fellow enthusiast, you rush out at once. You return home shortly afterwards, downcast. The shop was a washout — no new programs, no joysticks, and a sales assistant who might as well have been selling double glazing.

Could this be you? Judging by the letters in the computer magazines, which tell of one sob story after another, I should think it quite likely.

○ ○ ○ ○

What on earth is the point of computer shops if people like myself can't try out new products? When even programs can cost around £8 each, us teenagers (who after all constitute the majority of home computers enthusiasts, or so the media would have us believe) with limited budgets can't afford to buy a bad program.

It has been debated, ad nauseam, whether or not software libraries or the Buy and Try scheme provide a solution. If our local computer shops were doing their job, this debate would be unnecessary. Any program could be tested before being bought.

Out of 12 well-advertised stores and specialist shops in my area, not one stocks what the ads say it should, or anything like a decent supply of software. I live in Harrow, but I buy my software from a shop in Exeter, which is helpful, knowledgeable, and gives very fast service (four days after ordering three programs, they arrived, with an apology for the delay!)

○ ○ ○ ○

Of course, events such as the Microfairs and the Home Computer Fair fulfill the same function. But they're only held from time to time, and not everyone can afford to go to them.

Software companies themselves could help, by giving clearer indications of what the program is like, what language it is written in, etc, so that customers are less likely to buy a program they don't want.

○ ○ ○ ○

For example, I saw the ad for Ultimate's two games, Pssst and Jet Pac, and decided against buying them. I then saw them at the ZX Microfair, and have since bought them both!

Software houses do themselves as well as their customers a great disservice by advertising their programs in a misleading way, as so many (and I don't mean Ultimate now) do. For an arcade game to be exciting and fast enough, it really needs to be in machine code — a fact generally accepted by everyone but the smaller software companies. But once bitten by a misleading ad, buyers will be twice shy of going to the same company again.

In HCW 15, news of GOSH — the Group of Software Houses — was announced. I hope that GOSH's members will take note of this plea for improvement. Otherwise, I fear that the sudden expansion of the software market will stop, and the trend may reverse. Bad dealers and software must not be allowed to be spoil it for everyone else.

David Lester
Student
Pinner, Middlesex

● This space if for you to sound off about the micro scene, to present bouquets or to hurl brickbats. Share your views by sending them to Paul Liptrot, Opinion, Home Computing Weekly, 145 Charing Cross Road, London WC2H 0EE. Please include your occupation and your interest in computing

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Can you save Miss Muffet from the spider?

Poor Miss Muffet. She's been chased by a spider into a labyrinth. It's up to you to guide her to the golden door. Lance Booth wrote this program for the standard TI-99/4A

In this game of luck, skill and judgement, an evil spider has chased Miss Muffet into a labyrinth, which is about to fill with deadly green slime. Can you help her to escape in time?

You must guide her — using the four arrow keys with the alpha lock button down — through the labyrinth to the golden door, the only way out.

The spider is patrolling the passages of the labyrinth, spinning webs to block Miss Muffet's escape. Don't let the spider catch Miss Muffet or it will devour her.

Take care not to let her get caught in a web or to touch the walls of the labyrinth which are covered with the spider's venom.

You set your own difficulty level, when line 330 asks for your time limit. This sets the limit at which the program leaves the game loop from line 690, and moves to the out of time routine at line 930. A time limit of 150 could be quite a challenge to start with, even if you get the right breaks.

Once you've had some practice, trying to work down to a limit of 100 becomes an addiction.

A variation on the game, where the spider can be made to move from bottom to top, instead of top to bottom, can be achieved by changing line 490 from FOR SR = 3 TO 23 STEP 2 to FOR SR = 23 TO 3 STEP – 2.

How it works

130-250 define characters and colours
260 sets screen colour to black
270-310 assign initial values to variables
320 clears screen
330 asks for time limit
340 clears screen ready for game
350-450 display labyrinth
460 displays Miss Muffet
470 displays Golden Door
480-780 main game loop
490-770 count down spider movement rows
500-510 & 750 control spider's movement along columns
520 checks keyboard
530 clears old player from screen
540-610 check for movement
620-660 check new screen positions
670 displays new player
680 adds one to penalty score
690 tests to see if limit is exceeded
700-710 check new spider position
720-740 move spider
760 displays web
790-810 touched the wall
820-890 eaten by spider
900-920 trapped in a web
930-990 ran out of time
1000-1060 play music
1070-1220 escape
1230-1250 display message
1260-1280 want to play again?

Hints on conversion

The program should be convertible for use on any computer with user-defined characters.

CALL CHAR (ASCII code number, hexadecimal string) Defines characters used in the program. The hexadecimal string describes the pattern to be given to the character with ASCII code stated.

CALL HCHAR (row number, column number, ASCII code, number of repetitions) Places character on screen at row and column specified, and repeats it horizontally the number of times stated. If this fourth value is omitted then the character is displayed only once. The character used is the one whose ASCII code appears in the command.

CALL VCHAR (row number, column number, ASCII code, number of repetitions) Works in the same way as CALL HCHAR only repeats vertically instead of horizontally.

CALL GCHAR (row number, column number, numeric, numeric variable) Equivalent of PEEK, assigns ASCII code of character at row and column stated to numeric variable.

CALL CLEAR Clears the screen.

CALL SCREEN (Colour code) Specifies screen colour, using colour code.

CALL COLOR (character set number, foreground colour code, background colour code) Specifies foreground and background colours for all characters in set stated.

CALL SOUND (duration, frequency, volume) Produces sound with duration, frequency, and volume specified. Duration is in milliseconds, frequency in Hertz (or noise code), and volume in scale from 0 loudest to 30 quietest.

CALL KEY (key unit, k,s) Equivalent of INKEY$ in other computers, returns code if key pressed in variable k.

```
110 REM  BY LANCE BOOTH
120 REM  SET CHARACTERS
130 CALL CHAR(41,"FFFFFFFFFFFFFFFF")
140 CALL CHAR(43,"183C7E183C7E1818")
150 CALL CHAR(128,"183C7EFFFFFFFFFF")
160 CALL CHAR(136,"7E5A7E7EA5A5A5A5")
170 CALL CHAR(152,"18187E183C7E2424")
180 REM  SET COLOURS
190 CALL COLOR(13,12,1)
200 CALL COLOR(14,15,1)
210 CALL COLOR(15,10,10)
220 CALL COLOR(16,11,1)
230 FOR I=2 TO 8
240 CALL COLOR(I,3,1)
250 NEXT I
260 CALL SCREEN(2)
270 MR=23
280 MC=16
290 SCORE=0
300 RANDOMIZE
310 DC=INT(29*RND)+2
320 CALL CLEAR
330 INPUT "WHAT IS YOUR TIME LIMIT?
    LIMIT
```

TI-99/4A PROGRAM

```
340 CALL CLEAR
350 REM  SET SCREEN
360 CALL HCHAR(2,1,144,32)
370 CALL HCHAR(24,1,144,32)
380 CALL VCHAR(1,1,144,24)
390 CALL VCHAR(1,32,144,24)
400 CALL HCHAR(1,1,43,32)
410 FOR ROW=4 TO 22 STEP 2
420 CALL HCHAR(ROW,1,144,32)
430 X=INT(29*RND)+2
435 Z=INT(29*RND)+2
440 CALL HCHAR(ROW,X,32)
445 CALL HCHAR(ROW,Z,32)
```

```
450 NEXT ROW
460 CALL HCHAR(MR,MC,152)
470 CALL HCHAR(2,DC 128)
480 REM  GAME LOOP
490 FOR SR=3 TO 23 STEP 2
500 Y=INT(29*RND)+2
510 FOR SC=2 TO Y
520 CALL KEY(3,K,S)
530 CALL HCHAR(MR,MC,32)
540 IF K<>83 THEN 560
550 MC=MC-1
560 IF K<>68 THEN 580
570 MC=MC+1
580 IF K<>69 THEN 600
```

```
590 MR=MR-1
600 IF K<>88 THEN 620
610 MR=MR+1
620 CALL GCHAR(MR,MC GET)
630 IF GET=144 THEN 790
640 IF GET=136 THEN 820
650 IF GET=128 THEN 1070
660 IF GET=42 THEN 900
670 CALL HCHAR(MR,MC,152)
680 SCORE=SCORE+1
690 IF SCORE>LIMIT THEN 930
700 CALL GCHAR(SR,SC,GET)
710 IF GET=152 THEN 820
720 CALL HCHAR(SR,SC,136)
730 CALL SOUND(100,110,0)
740 CALL HCHAR(SR,SC,32)
```

```
750 NEXT SC
760 CALL HCHAR(SR,SC,42)
770 NEXT SR
780 GOTO 480
790 GOSUB 1000
800 M$="MISS MUFFET TOUCHED THE WALL"
810 GOTO 1230
820 FOR I=1 TO 10
830 CALL HCHAR(MR MC,152)
840 CALL SOUND(50,-5,0)
850 CALL HCHAR(MR.MC,136)
860 NEXT I
870 GOSUB 1000
880 M$="THE SPIDER ATE MISS MUFFET"
890 GOTO 1230
900 GOSUB 1000
910 M$="MISS MUFFET'S TRAPPED IN A WEB"
920 GOTO 1230
930 FOR R=23 TO 3 STEP -2
940 CALL HCHAR(R,2,41,30)
950 CALL SOUND(-500,110+(R*10),0)
960 NEXT R
970 GOSUB 1000
980 M$="THE SLIME KILLED MISS MUFFET"
990 GOTO 1230
1000 REM  DEATH TUNE
1010 TONE=1100
1020 FOR C=1 TO 10
1030 CALL SOUND(+500,TONE,0)
1040 TONE=TONE-110
1050 NEXT C
```

```
1060 RETURN
1070 NOTE=110
1080 FOR C=1 TO 10
1090 CALL SOUND(-500,NOTE,0)
1100 NOTE=NOTE+110
1110 NEXT C
1120 CALL HCHAR(1,MC,152)
1130 M$="WELL DONE MISS MUFFET ESCAPED"
1140 CALL CLEAR
1150 PRINT "YOUR SCORE IS";SCORE
1160 PRINT
1170 PRINT "PENALTY POINTS"
1180 PRINT
1190 CALL HCHAR(9,1,152,32)
1200 CALL HCHAR(10,1,43,32)
1210 CALL HCHAR(12,1,42,32)
1220 CALL HCHAR(13,1,136,32)
1230 FOR J=1 TO LEN(M$)
1240 CALL HCHAR(11,1+J,ASC(SEG$(M$,J,1)))
1250 NEXT J
1260 INPUT "WANT TO PLAY AGAINT ";A$
1270 IF SEG$(A$,1,1)="Y" THEN 270
1280 IF SEG$(A$,1 1)<>"N" THEN 1260
1290 END
```

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Airstrike
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English Software, 50 Newton St, Piccadilly, Manchester

Airstrike seems popular as a demonstration at shows, and I can see why. It's a very good implementation of the arcade game Scramble.

There are all the usual objects — rockets, fuel and ammo dumps, mine storms, enemy aircraft and airlocks to be blasted through with the famous scramble landscape of ragged terrain and [illegible]. After completing a level, you enter a more difficult one.

Your ship has a very positive feel, with missiles and bombs operated by the joystick button and the space bar. Fuel, score, remaining bombs and missiles and ships are all shown during play. The balance of this game is a lesson to others.

M.P.

instructions	70%
playability	90%
graphics	90%
value for money	85%

★★★★

Legends in their own lifetime

Invaders, Scramble, Defender, Preppie — names that have gone down in microcomputer mythology

Skramble
VIC-20
£5.99

Rabbit, 380 Station Road, Harrow, Middx HA1 2DE

Some of you may have noticed a similarity between the name of this game and that of a popular arcade game. This is no mistake!

Across an alien landscape flies our hero, dropping bombs and shooting things. There is no division of control between the gun and the bomb, fire one and you drop the other.

The enemy consists of what appear to be free-standing aviators buildings with associated winding gear. Late little rockets are launched at our space ship, which seems to be oil fired, as it is large tanks of this that we must hit in order to keep fuel up.

There are some pretty spiders to shoot next, and then the game gets difficult.

I liked this game but it is rather flawed by the scoring system. Cumulative score is kept on the screen all through the game and then it disappears!

T.D.

instructions	70%
playability	50%
graphics	90%
value for money	55%

★★

Preppie II
Atari 400/800
32K (disc)
£25.49

From Atari mail order companies

Yes folks, he's back. Just when the other micros thought they were catching up, Wadsworth Overcash — America's Number 1 Preppie — is on it again.

This time the owner of the Nasty Nuts, furious after his defeat, has Wadsworth painting the floor of three mazes, while avoiding collision with the obstacles retained from Preppie. In the third and first mazes are numerous giant frogs out for revenge.

Preppie II is completely new and once again has incredible music and colour, with a cartoon break between each of the five levels. The hi-res startup screen puts everything else to shame. Simply the best.

M.P.

instructions	100%
playability	100%
graphics	90%
value for money	100%

★★★★★

Annihilator
VIC-20 £5.99

Rabbit, 380 Station Road, Harrow, Middx HA1 2DE

This is a Defender sub-clone, and I reckon it's a pretty good one. You know the plot: you're patrolling the rocky terrain of a distant planet when who should appear but etc, etc.

Arcade games provide software writers with games to copy but also with impossibly high standards to reach. This time, the shortcomings of a little memory have to a great extent been overcome by adaption. The attackers come in waves, and the mobility of the defending space ship is limited.

However, this is a very well thought-out game, and one that should provide a great deal of pleasure for many of its purchasers. It sounds like a whole arcade of space invader machines gone crazy, but let's not hold that against it.

T.D.

instructions	45%
playability	78%
graphics	80%
value for money	85%

★★★★

Invaders
Oric-1 £4

Arcadia, Freepost, Swansea SA3 4ZZ

Hasn't Arcadia done well? There really isn't much difference between this and the original arcade game.

The game is colourful, with good, if subdued, sound. The control keys are well chosen, and don't require any complicated finger gymnastics when the action hots up.

On screen instructions are good and unstuffy, the game is fully crash-prooted and well presented. The high score flashes and plays a tune when you beat it.

R.S.

instructions	85%
playability	80%
graphics	75%
value for money	90%

★★★★

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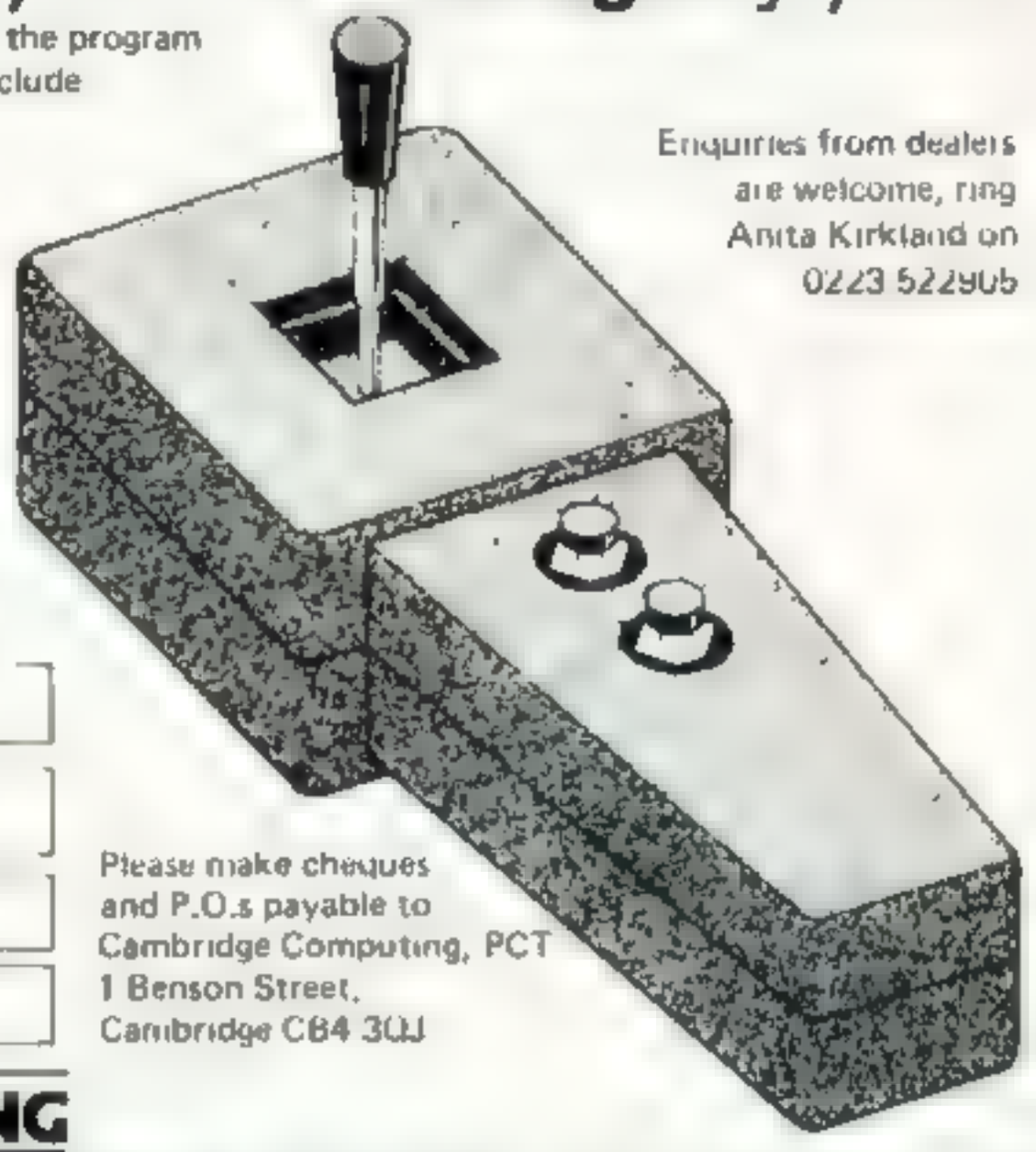

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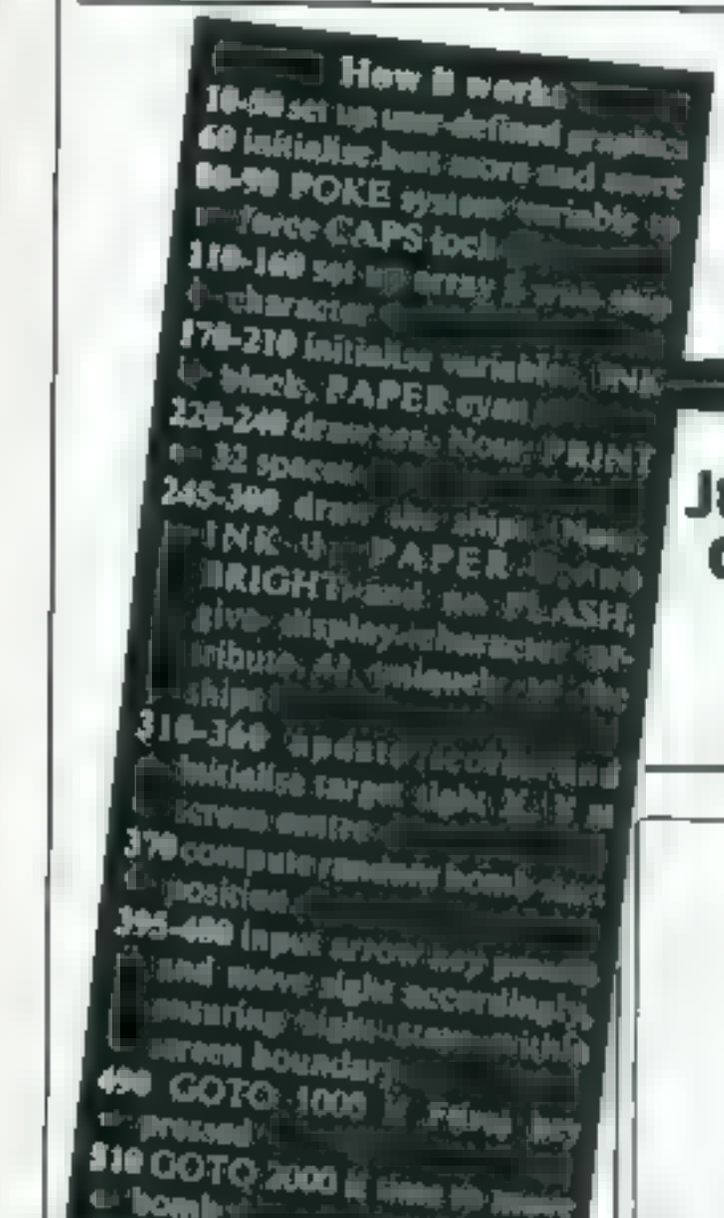
Your mission: save the fleet

Just you and your Spectrum can defend the fleet against a rain of bombs in Susan Kennedy's program



Save the Fleet puts you in charge of a gun-sight with which you must aim and shoot down the bombs that are dropping on your fleet of ships

The four arrow keys (5,6,7 and 8) control the gunsight movement with the F key being used for the fire button

The bombs will appear randomly across the screen and at varying heights, thus increasing the uncertainty during the total attack of 50 bombs.

Scores in the game are accumulated by intercepting the bomb, with a higher score, the higher up the screen the bomb is hit. If you are too slow and a bomb hits a ship then you lose 50 points

In order to maximise the speed of gun-sight movement whilst maintaining bomb movement and to overcome the problem of the Spectrum screen layout, a few interesting techniques have been employed

The program leaves the gun sight movement loop approximately every 400 msec by testing for a difference of 20 in the least significant time frame byte from the time of the last bomb move.

This is less accurate than using all three time frame bytes, but much faster, and the occasional quick movement of the bomb is not noticeable in the overall effect

The time that could be taken to detect a hit on one of the ships would be slow if one had to search an array of screen locations

This problem is neatly overcome by giving the ships a unique character attribute (41) and as much a hit can be detected by simply checking the attribute of the next bomb position. Once a hit has been established there is no longer the need to save time and a search can be made to find which ship was hit

This game is fairly simple in concept and is aimed at showing that by giving thought to time saving an arcade game can be written in BASIC. However, providing the time available to moving the gunsight is maintained, many improvements could be made such as

- Slow down bomb movement but increase the number of simultaneous bombs
- Introduce graphic lines of fire from the ships
- Introduce random explosive flashes on the screen aimed at confusing the player

I recommend that you first type in and run lines 10-50, which set up the user-defined graphics. This will aid you when typing in the graphic lines in the rest of the program

The graphics are: **A** bomb, **B** gunsight, **CDE** ship, **FGH** submarine, **I** explosion

Variables

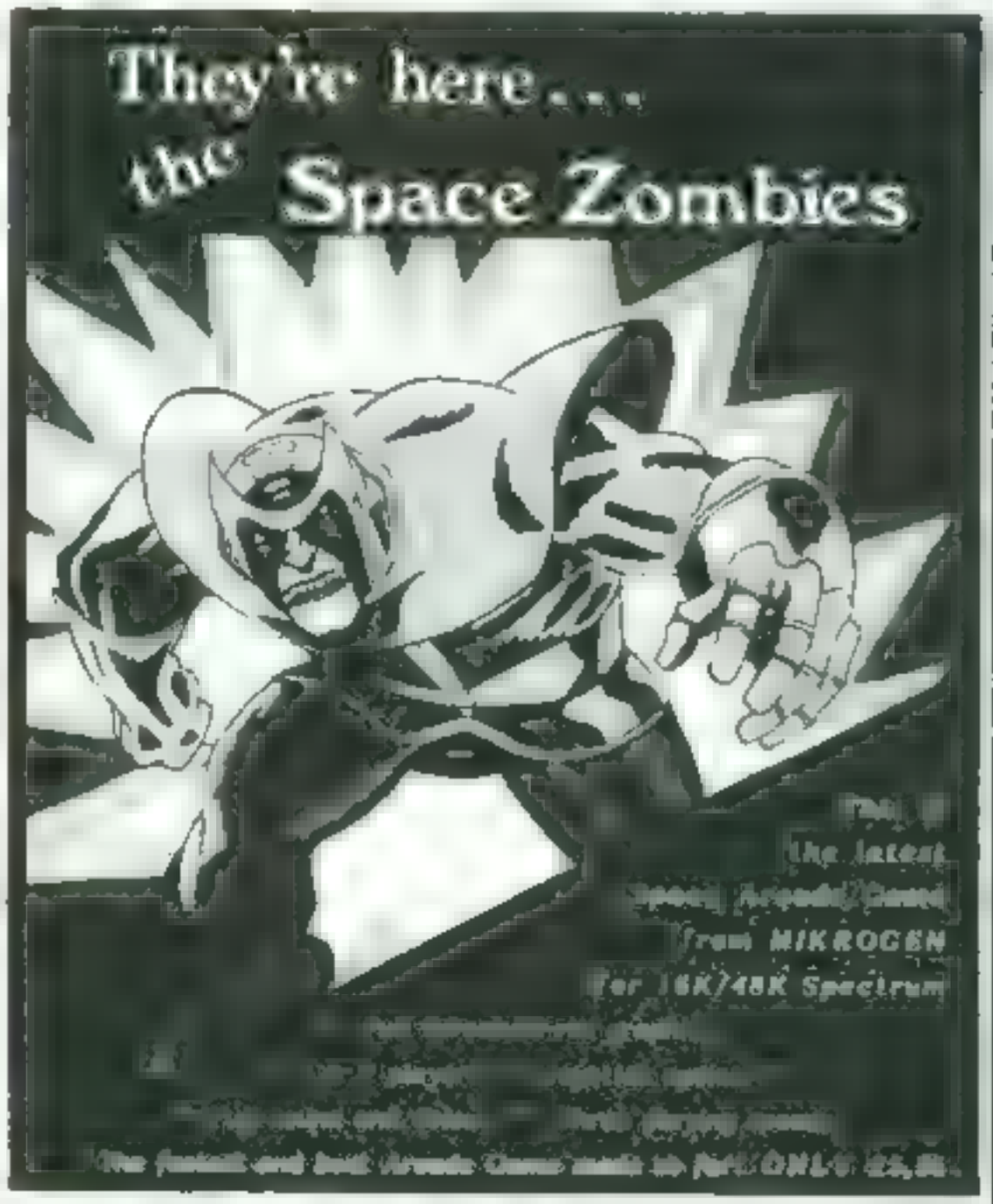
SC current score
BSC best score
S(5) array of ship locations
T current system time
T2 system time at last bomb move
X,Y target sight screen position
C bomb left count
X2,Y2 bomb screen position
A$ input key pressed

```
  10 REM SET UP USER GRAPHICS
  20 DATA 255,255,66,60,60,24,24
,24,129,66,60,36,36,60,66,129,0,
1,7,7,255,127,63,31,0,196,196,20
7,255,255,255,255,0,128,128,192,
255,254,252,248,0,0,1,1,31,63,31
,15,192,192,192,192,255,255,255,
255,0,0,0,64,240,252,252,240,17,
166,124,62,255,126,92,136
  30 FOR I=32600 TO 32671
  40 READ A: POKE I,A
  50 NEXT I
  60 LET SC=0: LET BSC=0
  70 RANDOMIZE
  80 REM SET CAPS LOCK
  90 POKE 23658,8
 100 BORDER 0
 110 DIM S(5)
 130 DATA 3,9,13,18,25
 140 FOR I=1 TO 5
 150 READ S(I)
 160 NEXT I
 170 CLS
 180 IF BSC<SC THEN LET BSC=SC
 190 LET T2=0: LET C=51: LET SC=
0
 200 INK 0: PAPER 5
 210 LET X=10: LET Y=15
 220 FOR I=19 TO 21
 230 PRINT AT I,0;"
 240 NEXT I
 245 REM DRAW SHIPS-ATTR 41
```

SPECTRUM PROGRAM

```
250 INK 1
260 PRINT AT 19,3;"▟▙"
270 PRINT AT 19,15;"▟▙"
280 PRINT AT 19,18;"▟▙"
290 PRINT AT 21,9;"▟▙"
300 PRINT AT 21,25;"▟▙"
310 INK 0: PAPER 7
320 PRINT AT 0,16,"HIGH SCORE="
,85C
330 PAPER 7  PRINT AT X,Y;" "
340 LET X=10: LET Y=16
350 PRINT AT 0,0,"      "
360 PRINT AT 0,0;SC
365 REM START POSITION OF BOMB
370 LET X2=(INT (RND*5))+1: LET
Y2=INT (RND*32)
380 LET C=C-1
390 IF C=0 THEN GO TO 3000
400 LET A$=INKEY$
410 IF A$="5" THEN PRINT AT X,Y
" ": LET X=X+1
420 IF A$="7" THEN PRINT AT X,Y
" ": LET X=X-1
430 IF A$="8" THEN PRINT AT X,Y
" ": LET Y=Y+1
440 IF A$="6" THEN PRINT AT X,Y
" ": LET Y=Y-1
450 LET X=ABS X: LET Y=ABS Y
460 IF X>10 THEN LET X=10
470 IF Y>31 THEN LET Y=31
480 PRINT AT X,Y,"X"
485 REM FIRE PRESSED ?
490 IF A$="F" THEN GO TO 1000
500 LET T=PEEK 23672
505 REM TIME TO MOVE BOMB ?
510 IF ABS (T-T2)>20 THEN GO TO
2000
520 GO TO 400
995 REM TEST FOR HIT
1000 IF X2<>X THEN GO TO 400
1010 IF Y2<>Y THEN GO TO 400
1020 GO SUB 4000
103■ LET SC=SC+INT (100/X2)
```

```
1040 GO TO 330
2000 IF X2>=19 THEN PAPER 6
2010 PRINT AT X2,Y2," "
2015 REM MOVE BOMB
2020 LET X2=X2+1
2030 IF X2=19 THEN PAPER 5
2040 IF ATTR (X2,Y2)<>41 THEN GO
TO 2100
2055 REM HIT SHIP BUT WHICH ?
2060 FOR I=1 TO 5
2070 FOR J=0 TO 2
2080 IF Y2=S(I)+J THEN GO TO 211
0
2090 NEXT J
2100 NEXT I
2105 REM EXPLODE SHIP
2110 FLASH 1: BRIGHT 1: INK 2
2120 PRINT AT X2,S(I);"▚▞▚"
2130 BEEP 1,1
2140 FLASH 0: BRIGHT 0: INK 0
2150 PRINT AT X2,S(I),"   "
2160 LET SC=SC-50
2170 PAPER 7: GO TO 330
2180 PRINT AT X2,Y2;"▼"
2190 LET T2=T
2195 REM TEST FOR SEA BOTTOM
2200 IF X2<>21 THEN PAPER 7: GO
TO 400
2210 GO SUB 4000
2220 PAPER 7: GO TO 330
3000 PRINT AT 5,0;"PLAY AGAIN (Y
OR N)"
3010 IF INKEY$="Y" THEN GO TO 17
0
3020 IF INKEY$="N" THEN NEW
3030 GO TO 3010
3995 REM BOMB EXPLOSION
4000 FLASH 1: BRIGHT 1: INK 2
4010 PRINT AT X2,Y2;"✱"
4020 BEEP .5,1
4030 FLASH 0: BRIGHT 0: INK 0
4040 PRINT AT X2,Y2;" "
4050 RETURN
```

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FRANKLIN'S TOMB £9.95

Franklin's Tomb is an adventure for one player. Can you, as Dan Diamond, solve the riddle of the crypt or will you fall prey to its mystery as so many other before you? Franklin's Tomb comes complete with a 20 page richly illustrated case file.

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DRAGON 32 and FANTASY 32K (please specify)

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Salamander Software

Plasma bolts at the ready

Those aliens are at it again. See how many you can blast into oblivion in Brian Hughes' game for the Dragon

The object of Dragatak is to shoot down as many aliens as you can as they try to move erratically up the screen and past your space station

You have control of horizontal movement through the right hand joystick, but don't get too close as you shoot or you may collide!

You score 100 or more points for each alien you destroy depending on how far away they are when you hit them

The game ends when.

- Ten aliens have got past you or
- You have run out of plasma bolts or
- You collide with an alien

There is a continuous read-out at the bottom of the screen showing, from right to left, the number of lives the aliens have left; your current score; and the number of plasma bolts you have left

Variables

Arrays
SP space station graphic (base)
BL/LB blanking graphics
EX explosion graphic
TH alien graphics
No to **N9** numeral graphics for score dispaly

Simple
X,Y co-ordinates of space station
X1,Y1 co-ordinates of space station's previous position
XF,YF co-ordinates of alien
FX,FY co-ordinates of alien's previous position
PB number of plasma bolts remaining
LV number of lives remaining

```
10 PMODE 3 PCLS3 CLEAR 200,31999
20 GOSUB1090 GOSUB720:GOSUB 12"0
30 FOR I=1 TO 50 PSET(RND(256)-1,RND 175 +8 2  N
EXT I
40 POKE &HFFD7,0:SCREEN1,0
50 X=INT(JOYSTK(0)*3.79)
60 IF X=X1 THEN 90
70 PUT(X1,0)-(X1+15,7),LB,PSET
80 PUT(X,0)-(X+15 ) SP PSET X1=
90 IF PB(1 THEN GOTO 230
100 BH=PEEK(65280)AND3
110 IF BH<>2 THEN GOTO 230
120 PB=PB-1
130 PUT(234,184)-(241 191 ,BL PSET =PB N<>,"0
ZO=2 GOTO 330
140 COLOR 2,3
150 NK=160
160 IF X+7<XF THEN 190
170 IF X+7> XF+7 THEN 190
180 NK=YF+4
190 LINE(X+7,8)-(X+7,NK PSET
200 LINE X+7 NK +7,8 PRESET
210 SOUND 100,1
220 IF NK<>160 THEN 380
230 PUT(XF,YF)-(XF+7,YF+7),BL,PSET
240 IF YF>7 THEN 260
250 IF XF> X+13 THEN 280
260 IF XF < X THEN 280
270 GOTO 440
280 GET(FX,FY)-(FX+7 F+7 BL G
290 PUT(FX,FY)-(FX+7,FY+7),TH,PSET
```

How it works

30 sets background colour
40 increase speed
50-80 check joystick movement
90 check button
100 check joystick and button
110 check button
120 reduce number of plasma bolts
130 display number of plasma bolts
140-220 check aliens
230-290 check
300-370 move alien
380-420 make
430 update counter and display counter
440-480 collision routine; invokes machine code procedure; then sounds explosion
490-510 reset variables for next game. Checks for running out of lives which is dealt with in 580-610
520-710 update and displays current score
720-990 sets up all the graphic arrays to be used in 'put/get' operations in the main loop
1000-1080 "do you want to play again?" clears screen resets variables if answer is yes
1090-1230 fill screen with playing instructions. There is a delay loop at 1220 which can be altered if wished
1250-1290 sets up machine code routine for screen inverse/normal

Hints on conversion

Not recommended! Definitely a case for writing your own version. If you have a machine that supports user defined graphics and allows text on graphic screens then you could construct a more compact program than this

```
300 XF=FX:YF=FY
310 IF F <8 THEN 490
320 F=F-8
330 H=INT RND 2
340 IF FX<8 THEN H=8
350 IF FX 239 THEN H= 6
360 FX=FX+H
370 GOTO 30
380 PLAY "V31 FOR I=1
390 PUT XF YF XF+ YF+7 EXPSET
400 PUT XF YF XF+ YF+7 BL PSET
410 PLA "ABCDEFDCBAEFGCDEF
420 NEXT I FX=RND 24H -1 F =1
430 SC=SC+100+INT
440 EXEC 32000 POKE &HFFD6,0 FOR I= 1
450 SOUND 192 SOUND 150
460 NEXT I
470 A$=
480 PCLS3 GOTO 1000
490 FX=RND(248 -1 F =1
500 LV=L -1
510 IF LV 1 THEN GOTO 560 ELSE C=
520 GOTO 530
530 RM=XC- INT 10 *10 YC=NK-10
540 RM=RM+1
550 ON RM GOSUB 620,630 640 650 660 670
```

```
560 CLS1
570 PRINT
580 IF
590 POKE &HFFD
600 A$=
610 GOTO 1000
620 PUT NX
630 P
640 PUT NX
650 PUT N
660 PUT N
670 PUT N
680 PUT N
690 P NX
700 PUT NX
710 PUT NX
720 POKE &HFFD
730 DIM
740 ZT
750 H=8
760 FOR I=0 TO 15
```

DRAGON PROGRAM

```
760 FOR I= 2 TO 13 FOR J= 2 TO 3 PSET(I,J,4) NE
T J,I
770 FOR I=4 TO 11 FOR J= 4 TO 5·PSET(I,J,4)·NEXT
J,I
780 FOR I= 6 TO 9 PSET(I,6,4)·NEXTI
790 FOR I=7 TO 8 PSET(I,7,4) NEXT I
800 GET(0,0)-(15,7),SP,G PCLS3
810 GET(0,0)-(7,7),BL,G PCLS3 GET(0,0)-(15 7  LB
 G,PCLS3
820 FOR I= 3 TO 4 PSET(I,0,1)·NEXTI FOR I=2 TO 5
 PSET(I,1,1)·NEXTI·FORI=2TO3·FORJ=1TO5 PSET(J,I,
1)·NEXTJ,I
830 FOR I= 4 TO 5 FOR J=2 TO 5 PSET(J,I,1)·NEXTJ
,I
840 FOR I= 0 TO 1·PSET(I+1,6,1)·PSET(I+5,6,1) NE
XTI
850 FOR I=0 TO 7·PSET(I,7,1) NEXT I
860 GET(0,0)-(7,7),TH,G PCLS3
870 FOR I= 1 TO 34 PSET(RND(0)-1,RND(8)-1,2)·NEX
T I
880 GET(0,0)-(7,7),EX,G PCLS3
890 FOR I=0 TO 6 STEP 2 PSET I,0,2) PSET(I  2
NEXT I FOR I=0 TO 7 PSET(0 I 2) PSET  I 2  NEXT
 I
900 GET (0,0)-(7,7  N0 G PCLS3
910 FOR I=0 TO 7 PSET(4,I,2) NEXT I GET(0 0
7) N1 G PCLS3
920 FOR I=0 TO 6 STEP 2 PSET(I,0,2)·PSET(I,3,2)
PSET(I  ),2  NEXT I FOR I=1 T,  PSET  1
 0 I+3 2) NEXT I GET 0 0  G PCLS3
930 FOR I=0 TO 6 STEP 2·PSET(I,0,2) PSET(I,3,2
PSET(I,7,2)·NEXT I·FOR I=0 TO 7 PSET(5,I,2  T
 I GET 0,0 -(7 7  N1 G PCLS3
940 FOR I=0 TO 6 STEP 2 PSE  1  NE T I FOR I
=0 TO3 PSET(0,I,2) PSET(5,I,2  1+4
T I·GET(0,0)-(7,7),N4,G PCLS
950 FOR I=0 TO 6 STEP 2 PSET(I,0,2) PSET
PSET(I,7,2) NEXT I FOR I=0 TO 3 PSET(0,1
 6,I+4 2) NE T I  ET 0 0
960 FOR I=4 TO 6 PSET(0,I,2) NEXT I GE
 , N6 , PSET 5 I  PSET(5
8
970 FOR I=0 TO 4 STEP2 PSET(I,7,3) NEXT I FOR I=
4 TO 6 PSET(0,I,3) NEXT I·GET(0,0)-(7,7),N3
PCLS3
980 FOR I=0 TO 6 STEP 2 PSET(I,0,  NEXT I
=1 TO 7·PSET(6,I,2) NEXT I GET(0
990 RETURN
1000 SCREEN0 0 CLS
1010 PRINT@24 A$
1020 PRINT@230,"YOUR FINAL SCORE IS -
1030 PRINT@416,"do you want to play again?(yOR
1040 F$=INKEY$ IF F$="" THEN 1040
1050 IF F$<>"Y" THEN CLS END
1060 LV=10 PB=50·SC=0 FX=RND(248)-1·FY=177 XF=0
,F=4
1070 PCLS3
1080 POKE &HDDF7,0 GOTO 30
1090 CLS PRINT@10,"alien attack'
1100 PRINT@64,"SHOOT DOWN THE INVADING ALIENS
1110 PRINT@96,"AS THEY TRY TO PASS YOU
1120 PRINT@160,"YOU SCORE 100  FOR EVERY ALIEN
1130 PRINT@192,"YOU HIT-BUT WATCH OUT FOR
1140 PRINT@224,"COLLISIONS!YOU CAN MOVE YOUR
1150 PRINT@256,"SPACE STATION HORIZONTALLY ..IN
 60 PRINT@288,"THE RIGHT HAND JOYSTICK,AND FIRE
1170 PRINT@320,"PLASMA BOLTS USING THE FIRE
1180 PRINT@352,"BUTTON-BUT BEWARE-YOU ONLY HAVE
1190 PRINT@384,"50 BOLTS.THE ALIENS WILL KEEP
1200 PRINT@416,"COMING AS LONG AS YOU SHOOT THEM
1210 PRINT@448,"DOWN-YOU HAVE TEN LIVES
1220 FOR I=1 TO 3500 NEXTI
1230 RETURN
1250 FOR I= 1 TO 26
1260 READ A POKE I+31999,A
1270 NEXT I
1280 RETURN
1290 DATA 198,9,142,6,0,166,136,0,67,167,1 0 4
8,136,1,140,30,0,38,241,90,193,0,38,233,57
```


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Computer flights of fantasy

Know the fear of flyng with these aerial adventures for a range of micros.

Winging It TI-99/4A £10

Not Polyoptics, from Stainless Software, 10 Alstone Road, Stockport, Cheshire SK4 5AH

Could this be the first flight simulator for the TI? Once you've mastered basic flying, you can progress to one of three games. In game 1 you locate and fly over a meteorite; game 2 sets you the task of finding and destroying a flying saucer, and in game 3 you are pitted against an enemy plane.

There's no 3D view of the runway or the like, but there is a first-class display of the instrument panel, and realistic engine noises. Comprehensive instructions are supplied.

The instructions warn that beginners may have a rough ride, and they aren't kidding. Taking off was OK, but once in the air I found an affinity for flying upside down and making unscheduled and rather violent landings.

Still, practice makes perfect. I thought this was an excellent program, which should appeal to budding pilots of all ages. **D.B.**

instructions	100%
playability	90%
graphics	90%
value for money	90%

★-★-★-★-★

Nightflight Dragon 32 £7.95

Salamander Software, 27 Ditching Rise, Brighton, East Sussex BN1 4QL

If this is a flight simulator I am green with yellow stripes (I'm not.) The Dragon can do, and has done, much better stuff than this. The best thing about the game is the opening title page, and even then they played Those Magnificent Men in their Flying Machines wrong!

Low resolution graphics, bad use of colour and unrealistic sound. The screen did not look at all like a plane cockpit...no dials, all the same presentation.

I would now like to say "on the plus side", but there isn't a plus side. I suppose the instructions were clear(ish) but they weren't relevant to the game.

Psion's flight simulation program for the ZX81 is much better than this, it has higher resolution graphics, is more responsive and more realistic. **P.S.**

instructions	80%
playability	10%
graphics	1[illegible]%
value for money	30%

★

Landfall BBC B £7.95

Virgin Games, 61-73 Portobello Road, London W11

This is a sort of sophisticated Lunar Lander though as the landing process is all done by instruments it could be more aptly described as a spaceship landing simulator.

The overall effect is very convincing colour is unobtrusive but effective, and the sounds (which you can switch off) are realistic.

Landing safely is no easy feat - you really have to watch all the gauges and keep a balance to avoid being burned up on entry. I never managed to land at all, and would have liked some sort of variable difficulty level or practice option.

The program loads in three blocks, and after loading the first I had all the signs of a crash on my hands. After several attempts I just let it continue and it loaded the second block - a screen picture, then the game.

instructions	8[illegible]%
playability	67%
graphics	73%
value for money	86%

★-★-★-★-★

Night Flight TI-99/4A £5.00

Stainless Software, 10 Alstone Road, Stockport, Cheshire

As commander of the Starship Patscram, it is your task to clear a landing strip in a hostile city defended by ground lasers and spacecraft.

This is an addictive game which requires dexterity to manipulate the 10 keys needed to play fully. There are plenty of skill levels and great scope for player improvement.

You score points for forward movement and firing splat bombs but these diminish your fuel. Points are also awarded for destroying the enemy safely landing and refuelling. High scores can be saved on tape.

This is a lengthy program to load but there is only a minimum delay in setting up. It has at least two bugs:

1 The acceleration command lets your ship eat the right-hand boundary.

2 Bomb speed keys are inoperable if ship's control keys are reselected.

But these are minor irritations in what is otherwise a very good TI game.

instructions	[illegible]
playability	90%
graphics	80%
value for money	90%

★-★-★-★-★

Up Up and Away Atari 400/800 £14.95

Starcade, 15 Moorfields, Liverpool, L1 22BQ

If you've worn your nerve-endings to a frazzle with pacman, invading creatures and perilous adventures, perhaps you think hot air ballooning would make a nice quiet change. Take it from me – Up Up and Away will make you want to keep your feet firmly on the ground.

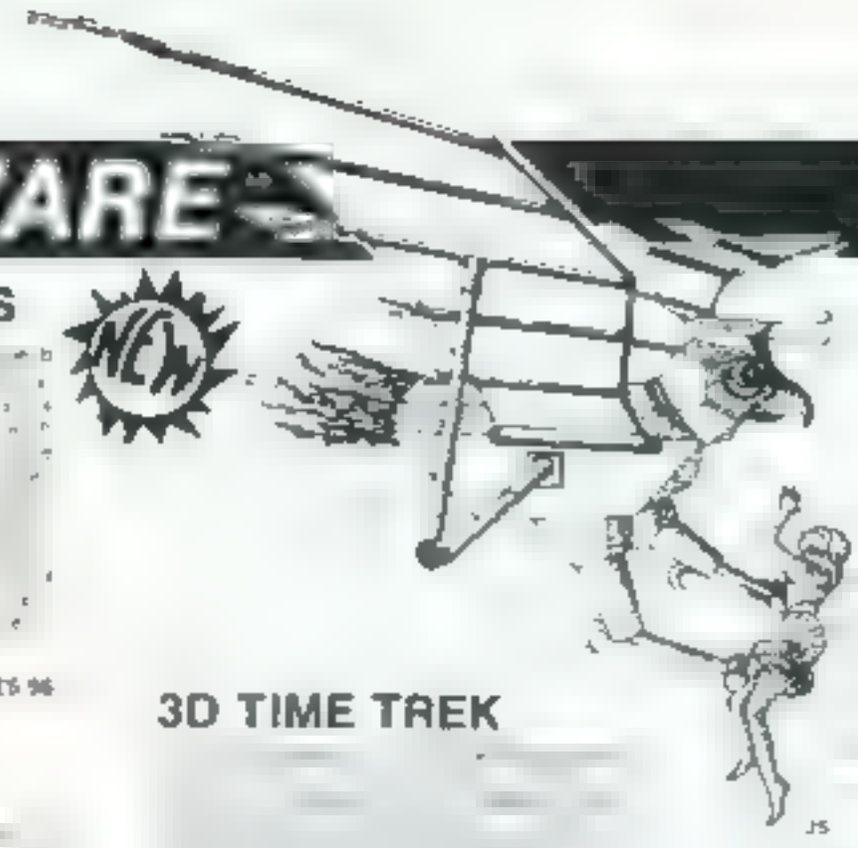
You take off with a limited amount of butane and ballast, and your aim is to fly round a circuit avoiding hazards on the way. These range from nasty little boys with slingshots, updraughts and downdraughts, thunderstorms, the local Flying School for the Shortsighted, and even incontinent pigeons!

The graphics are among the best I've ever seen, and the five levels of difficulty will provide a long lasting challenge. **J.P.**

instructions	80%
playability	85%
graphics	95%
value for money	85%

★-★-★-★-★

ANIROG SOFTWARE



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Give your VIC lots more character

Take the tedium out of redesigning characters. Allen Webb's program for the VIC-20 does the work for you

There are few items of software available for the VIC-20 that do not use custom designed characters in some way. Most home computers have the ability to display user defined characters but the VIC seems to have better facilities than most

In short, the VIC enables you to redesign a full set of 256 characters. In fact, by switching between the ROM sets, a 256 full set and a 128 half set, you have access to a grand total of 640 characters (and that's enough for anybody).

The one big nuisance with user defined characters is the designing/entering stage of the characters. To the uninitiated, this process involves:

A Design the character on some kind of eight by eight grid
B Calculate the data value corresponding to each line of the character.
C Enter the data values into the right portion of RAM in the VIC.

In all, this job is soul destroying, tedious and unnecessary. The logical approach is to use a program to perform all the work. A number of software houses have accepted this fact, and a number of character designing routines are available, at a price

I have used a number of commercially available programs and came to the conclusion that none provided an adequate environment for the design of large numbers of new characters

In this light, I have developed a routine which provides all the necessary facilities. This article describes the routine and give instructions for its use

First I will give the basic design criteria I specified for the routine

1 The routine must enable the user to create 256 new characters at one sitting without recourse to unwieldy use of tape storage

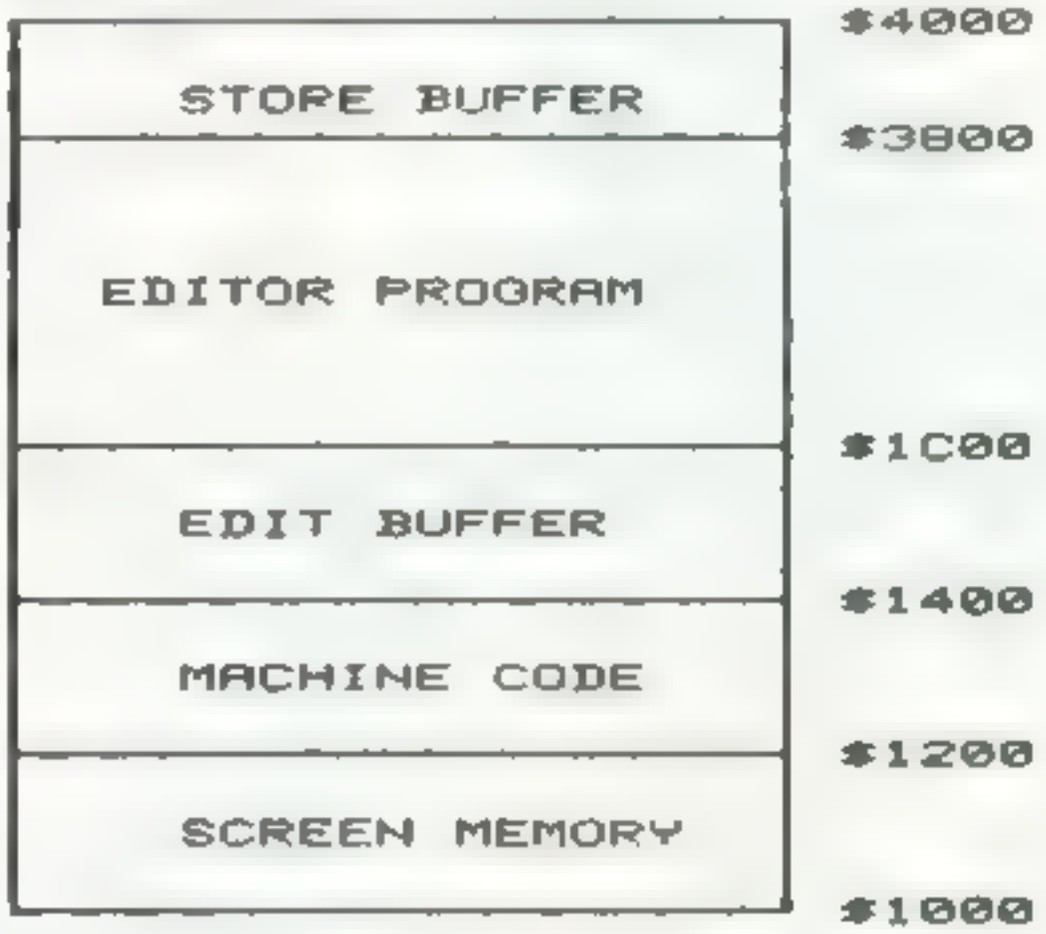
2 All data manipulation should be fast with use of machine code as required

3 The program should allow you to create 'macros' consisting of up to 25 characters

4 The editor should offer as many facilities as possible but remain uncomplicated

5 There should be facilities for the saving and loading of character files on tape and the down-loading of the character block to the correct RAM area

Figure 1 — memory map



In view of these requirements, it soon became clear that a memory expansion of at least 8K was necessary. The operational foibles of the 6560 chip are such that any new characters must reside at specified locations between $1000 and $1E00. As a consequence the bottom of BASIC must be raised to accommodate the characters. **Figure 1** gives details of the new memory map

The simplest method of handling the characters was to use two storage buffers. An edit buffer located at between $1800 and $1A00 is used to hold the block of 64 characters during the editing process

A larger storage block residing at $3800 is used to store the full 256 characters as four blocks. Blocks of 64 characters are then moved from the storage buffer to the edit buffer for design and then back again for storage

The first step is to type in the program. Do this as you would any other program but **don't run it yet!** Save the program. Reset the VIC by a SYS 64802

- Type in the one line program 10 POKE 44,28: RUN

- Execute the direct command POKE 642,28: SYS64824

- Load the character editor Type in POKE44,18 followed by Return

- SAVE the program as normal

You now have a relocated routine as described in Figure 1. I suggest that you make at least three verified copies of the routine (accidents can happen!!) You can now run and debug the program

Now the hard work is over, we can now get down to using the program. On running you will see the main menu. You select the options by pressing the corresponding number

Option 1 enters the edit mode and gives you a screen similar to **Figure 2.**

The display is rather crowded so I'll give a quick run down on the items. The top three lines show the 64 characters in the edit buffer. The character being edited is printed in cyan to distinguish it from the rest. The edit window is the 8 × 8 grid in which the character is designed. The macro window is used for building up complex forms out of several characters

The column of numbers between the windows are the data values for use in data statements, if required. The command line is used for input prompts. The bottom two lines summarise the commands available in this mode

On entering edit mode the first character is selected for editing. This character is drawn in the edit window and the corresponding data values shown. A chequered edit cursor is printed in the top left corner of the window. This cursor is printed in the top left corner of the window. This cursor can be moved with the normal cursor controls (ie up, down, left, right & home). Pressing return will send the cursor to the extreme left of the next line down. CLR will clear the edit window. Pressing * will set the point under the cursor and SPACE will clear the point. The data values and the character in the top three lines will change as you edit the character

Two commands enable you to change the orientation of the character

I will invert the character
R will reverse or reflect the character

Once you have finished with the character you can move on to another by one of two commands

N will move on to the next character
G will goto any specified character

You can copy any character by pressing 'C'

You enter macro mode by pressing M. You will then be asked if you wish to clear the window. You can specify the size of the macro up to a size of 5 × 5

A cursor will appear and you will be asked to enter the characters to be used in the macro. The character currently under the cursor will be given as a default value to help prevent unnecessary typing

Press E to leave edit mode and return to the main menu. I realize that the number of editing commands is large, but after a short time you will get the hang of it

The second option on the main menu relates to the movement of data. On pressing 2, you will see a second menu Options 1 and 2 allow you to move character blocks from the store buffer to the edit buffer and vice versa. Option 3 allows you to down-load any of the blocks of characters in the ROM to the edit buffer. Option 4 will fill the edit buffer with blanks. You can abort any of the data movement commands by pressing *.

Option 3 on the main menu will kill the program and restore your full memory. The store buffer is down-loaded to the space $1400 to $1C00. The start of BASIC at $1C00 and leave any characters below it intact.

Options 4 and 5 enable you to save and load the store buffer on tape This is useful if you plan to spend several sessions designing your character sets

Option 6 on the main menu will display the contents of the store buffer on screen Each block of 64 characters will be displayed in a different colour You should be careful to save the edit buffer in the store buffer before using this option since the edit buffer will be corrupted

OK, so what do you do when you've designed your character set?

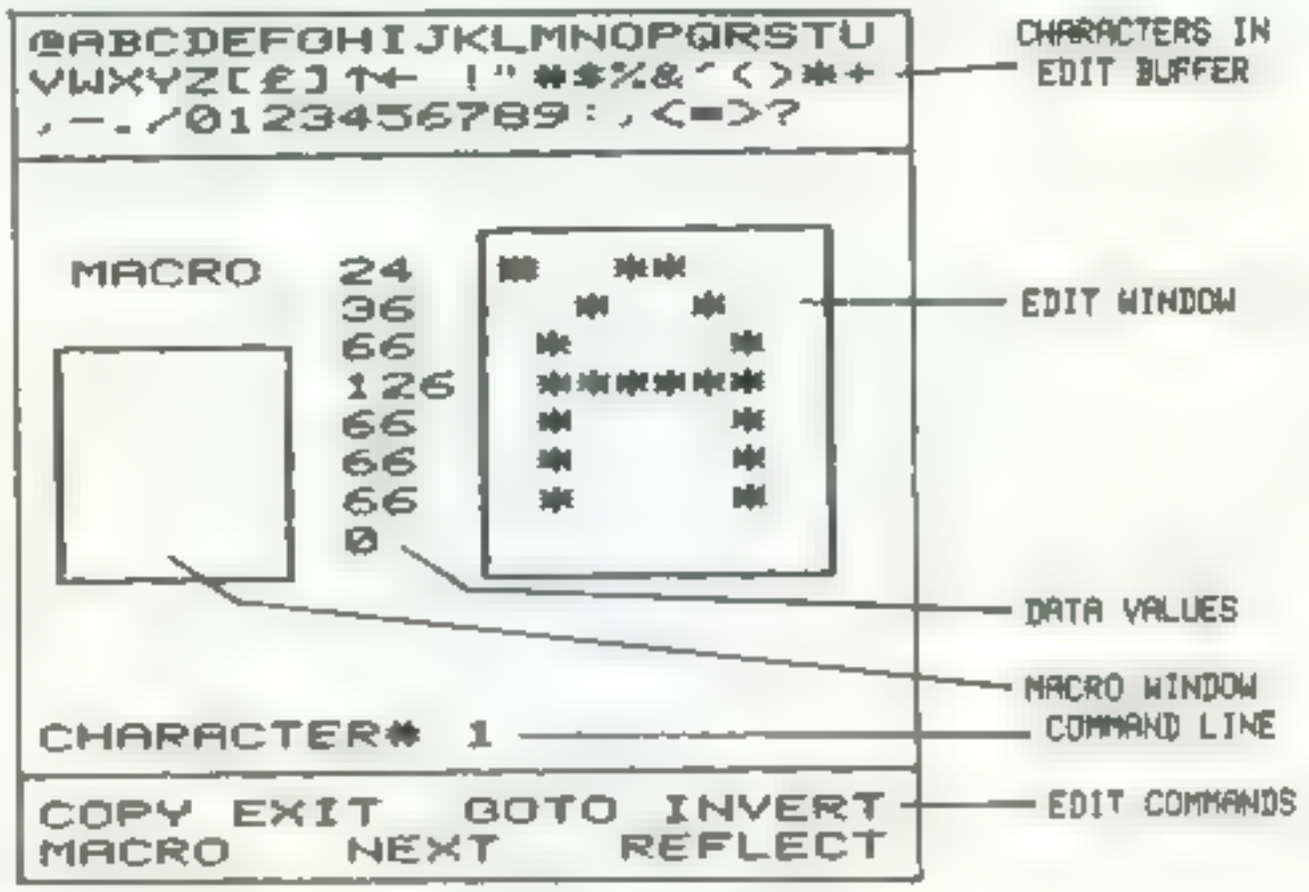
You must ensure before proceeding that all of the characters are in the store buffer If you kill the program with option 3 of the main menu, this restores your full memory and puts the store buffer in the area starting at $1400

The start of BASIC is still at $1C00. You can now load or type in your own program To use the new set of characters redirect the internal pointer with POKE 36869, 205. To save your program with the character set

Input the command POKE44,18 followed by Return

Save and verify the program as normal

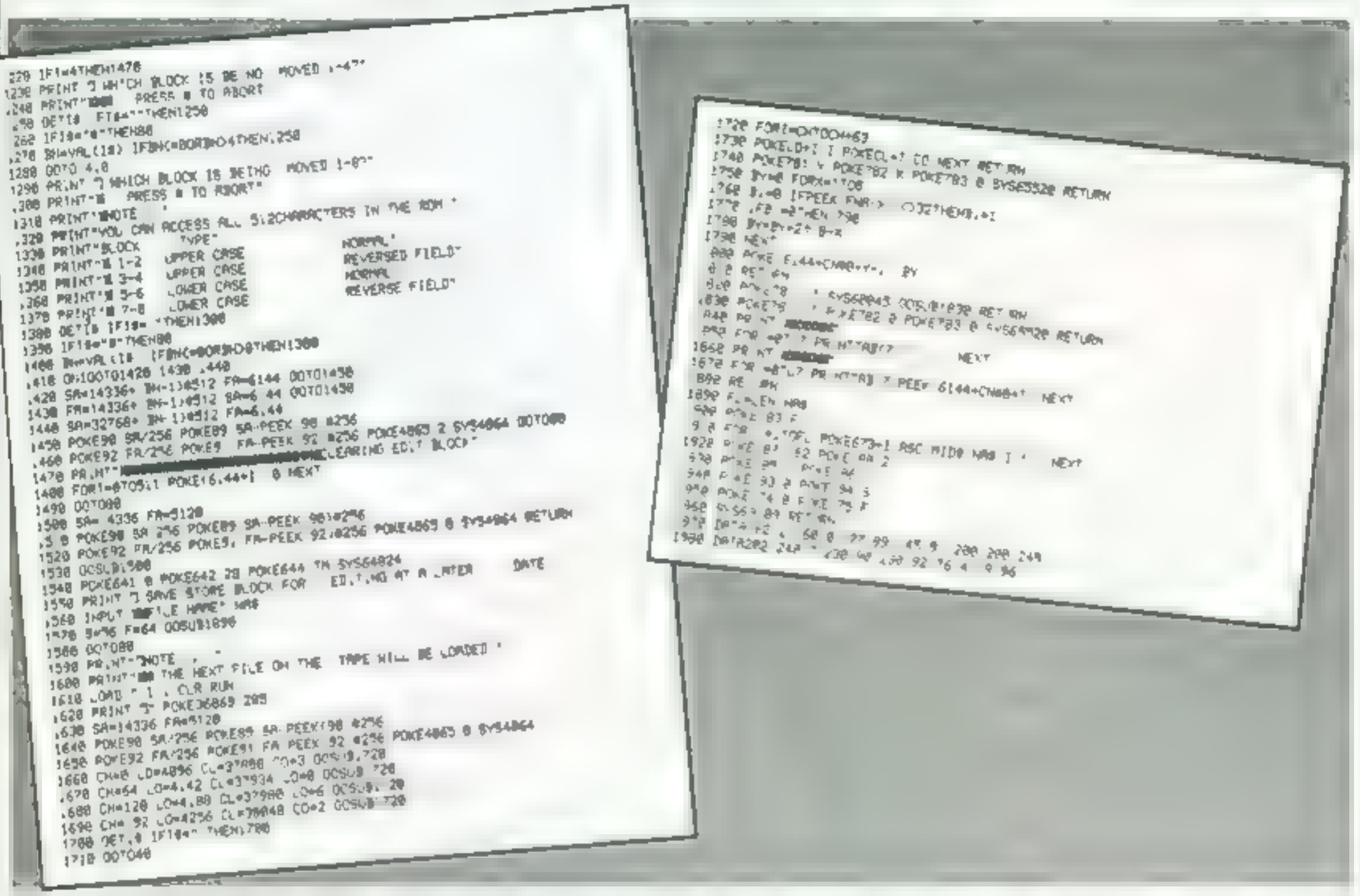
Figure 2 — what the screen looks like




```
10 REM CHAR EDIT A E MENU 903
20 PRINT"J" CU$="
30 OF=33792 FOR A=4864 TO 4889" READX POKE A,X NEXT
40 POKE89,0 POKE90,28 POKE91,0 POKE92,28 POKE4865,A:SYS4864
50 TM=PEEK(56) POKE56,56 POKE650,128
60 DEFFNA(X)=A+4239+X-32*(X>95)-64*(X>127)
70 DEFFNB(X)=4096+(Y+1)*22+X
80 PRINT"J" CHARACTER EDITOR" POKE36869,192
90 PRINT"D  £ED.T CHARACTERS
100 PRINT"I  £CE MOVE DATA"
110 PRINT"K  £CD KILL PROGRAM WITH     CHARACTERS IN          POSITION"
120 PRINT"S  £CB SAVE CHARACTERS       FROM STORE BLOCK
130 PRINT"L  £CA LOAD CHARACTERS       FROM TAPE TO STORE     BLOCK"
140 PRINT"E  £CC D SPLAY STORE         BLOCK"
150 PRINT"     SELECT OPTION"
160 GET!$ IF!$="" THEN170
170 I=VAL(I$) IF(I<0OR(I>6)THEN160
180 ON(OOTO)90,1130,1530,1550,1590,1620
190 PRINT"J" POKE36869,205 D=0
200 FORI=1TO7:J=9
210 POKE3968+I,PEEK(37760+I):NEXT
220 PRINT"
230 PRINT"
240 PRINT"AB 11)
250 FORI=1TO8
260 PRINT"AB 11
270 NEXT
280 PRINT"AB(
290 PRINT"  MACRO = PRINT"B
300 FORI=1TO5:PRINT"I     I":NEXT
310 PRINT"
320 J=18:GOSUB1820:PRINT"B
330 PRINT"£LOPY £EXIT  £GOTO £INVERT  £MACRO £NEXT £REFLECT"
340 FORI=2TO7
350 CV=PEEK(6,44+CH#8+I)
360 V=I+6:FORJ=7TO0STEP-1
370 X=19-J
380 D$=" ":IF(CV AND 2↑J)>0 THEND$="*"
390 GOSUB1740:PRINTD$
400 NEXT:NEXT
410 J=18:GOSUB1820:PRINT"EDITING CHARACTER#"CH:POKE37888+CH,3
420 X=1:Y=1
430 LC=PEEK(FNA(X)):POKEFNA(X),102
440 GET#8,IFA$=""THEN440
450 A=ASC(A$)
```

```
460 IFA=17ANDY<8THENY=Y+1:POKE 0070478
470 IFA=145ANDY>1THENY=Y-1:POKE 0070478
480 IFA=29ANDX<8THENX=X+1:POKE 0070478
490 IFA=157ANDX>1THENX=X-1:POKE 0070478
500 IF A=" "ORA=145ORA=29ORA=157 THEN570
510 IFA=13THENPOKEFNA(X),LC:X=1:Y=Y+1:GOTO430
520 IFA=47THEN640
530 IFA=42THEN680
540 IFA=32THEN720
550 IFA=78THEN760
560 IFA=67THEN520
570 IFA=69THEN90
580 IFA=77THEN870
590 IFA=?THEN790
600 IF A<65THEN610
610 IFA=73THEN1040
620 IFA=82THEN 870
630 POKEFNA(X),LC:GOTO430
640 FOR=1TO8:FORK=TO8
650 POKEFNA(X),32:NEXTX:NEXTY:FORY=1TO8:GOSUB1750:NEXT:GOSUB1040
660 X=1:Y=1:GOTO430
670 POKEFNA(X),LC:X=X+1:IFX=9THENX=1:Y=Y+1
680 POKEFNA(X),42:X=X+1:IFX=9THENX=1:Y=Y+1
690 PRINTLEFT$(CU$,6+Y);TAB(7+X);"■■■";PEEK(6,44+CH#8+Y-1);
700 IFX=8THENX=0
710 X=X+1:GOTO430
720 POKEFNA(X),32:X=X+1:IFX=9THENX=1:Y=Y+1
730 PRINTLEFT$(CU$,6+Y);TAB(7+X);"■■■";PEEK(6144+CH#8+Y-1);
740 IFX=8THEN430
750 X=X+1:GOTO430
760 POKE37888+CH,6:IFPEEK(6)THENCH=CH+1
770 GOTO340
780 J=18:GOSUB1820:INPUT"GO TO CHARACTER#";C$:C=VAL(C$):
790 IFC>63ORC<0THEN780
800 POKE37888+CH,6:CH=C
810 POKE37888+CH,6:GOTO340
820 J=8:GOSUB1820:INPUT"COPY CHARACTER#";CC$:CC=VAL(CC$)
830 IFCC<0ORCC>63THEN820
840 FORI=0TO7
850 POKE6,44+CH#8+I,PEEK(6144+CC#8+I):
860 NEXT:GOTO340
870 J=18:GOSUB1820:INPUT"CLEAR MACRO AREA";IN$:IFIN$="N"THEN900
880 IFIN$<>"Y"THEN870
890 FORY=1TO4:FORX=1TO8:POKEFNB(X,32:NEXT:NEXT
900 J=1:GOSUB1820:INPUT"WEIGHT OF MACRO";HI$:HI=VAL(HI$):IFHI>5ORHI<0THEN870
910 J=8:GOSUB1820:INPUT"WIDTH OF MACRO";WI$:WI=VAL(WI$):IFWI>5ORWI<0THEN910
920 POKEFNA(X),32:X=X+1:IFX=9THENX=1:Y=Y+1
930 A$="0":A=1TO9+7*(A$="A"):FORI=0TOWI
940 CH=PEEK(FNB(X)):IFCH>127THENCH=CH-128
950 POKEFNB(X),32:POKEFNB(X)+OF,C
960 J=8:GOSUB1820:PRINTCHARACTER#";CH
970 INPUT"■■■■■■■■■";C$:C=VAL(C$)
980 IFC>63ORC<0THEN970
990 POKEFNB(X),C:X=X+1:NEXT:NEXT:X=TX:Y=TY
1000 J=8:GOSUB1820:PRINT"EDITING CHARACTER#"CH:POKE37888+CH,3:GOTO430
1010 POKEFNA(X),LC
1020 IFY<8THENY=Y+1
1030 X=1:GOTO430
1040 FORI=0TO7:NO=1:NO=PEEK(6,44+CH#8+I):NEXT
1050 A$="0":FORI=0TO7:POKE6,44+CH#8+I,NO:NEXT
1060 GOTO340
1070 FORI=0TO7:NO=PEEK(6144+CH#8+I):FORJ=0TO7
1080 A=A+(NO AND 2↑J)>0:NEXTJ
1090 NO=2↑I:NEXTI
1100 NO=NO+A:IFA=42THENNO=1
1110 POKE6,44+CH#8+I,NO:NEXTI
1120 GOTO340
1130 POKE36869,192
1140 PRINT"DIRECTION OF   DATA TRANSFER"
1150 PRINT"■■■ ■■■ STORE TO EDIT BLOCK"
1160 PRINT"■ ■■■ EDIT BLOCK TO STORE"
1170 PRINT"■ ■■■ ROM TO EDIT BLOCK"
1180 PRINT"■■■ ■■■ CLEAR EDIT BLOCK"
1190 GET!$:IF!$=""THEN1190
1200 I=VAL(I$):IFI<0ORI>4THEN1190
1210 IFI=0THEN290
```

VIC-20 PROGRAMMING



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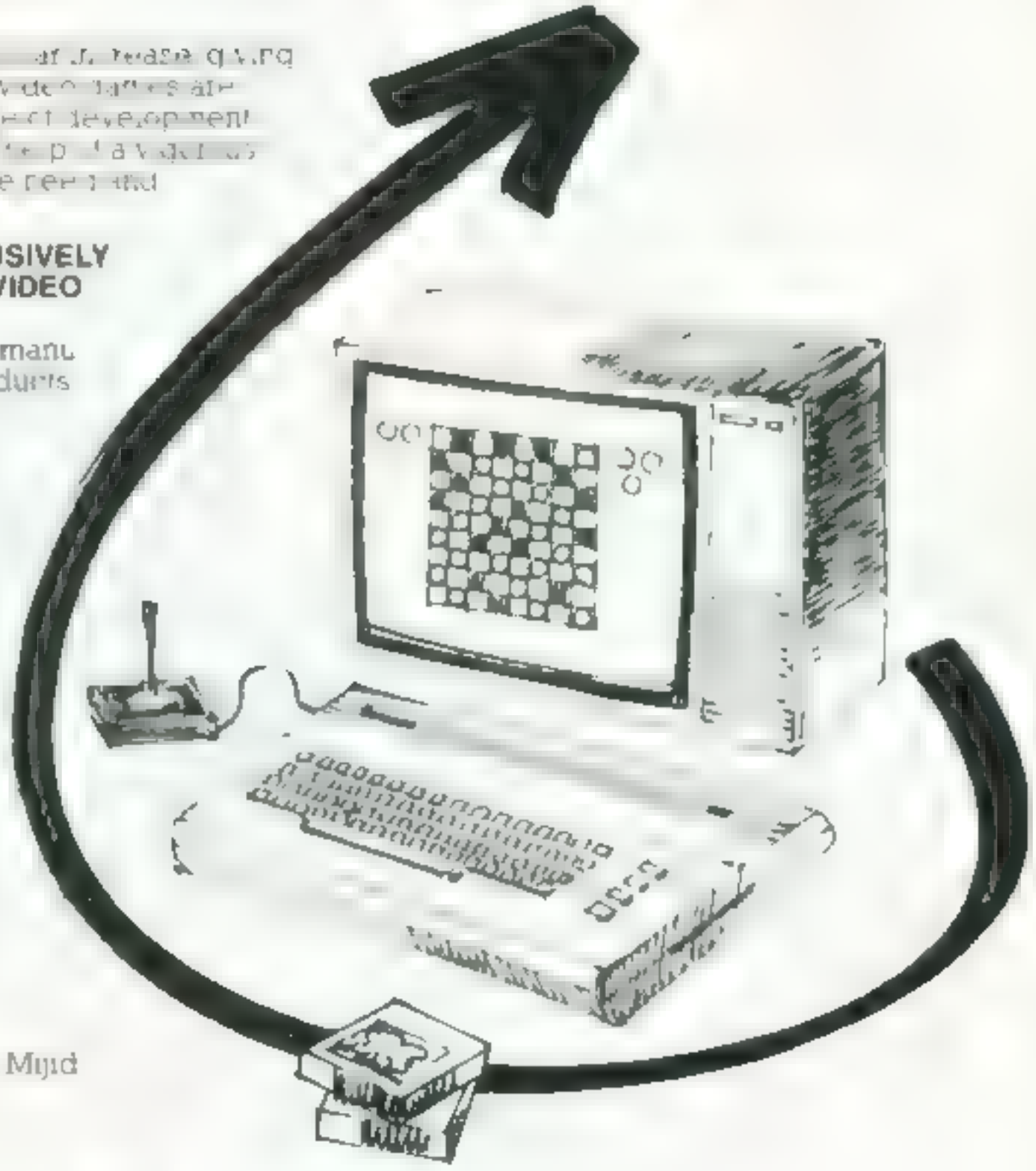

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Messing about on your micro

Want to tamper with the inner workings of your micro? Perhaps one of these programs might be of service.

Monitor Jupiter Ace £5.95

Jupiter Cantab, Cheshunt Building, Bateman Street, Cambridge CB2 1LZ

A fairly standard utility program featuring the usual machine code facilities, with the useful options of reading the stack and using FORTH words interactively from within the monitor

A bufferfull of bytes can be poked directly into nominated addresses, but there is no provision for reading the amount of memory left and the monitor will cheerfully list the contents of non-existent memory addresses – try FFFF!

Hex, octal and decimal bases are available but the main display uses only half the screen and there is no automatic carriage return between successive inputs

This produces a rather untidy display and provides less information than the Remsoft toolkit with which this monitor will inevitably be compared G.M

instructions	80%
ease of use	70%
display	n/a
value for money	65%

★★★

Ace-Atari Cassette Enhancer Atari 400/800 £7.95

English Software, 50 Newton St, Piccadilly, Manchester

This piece of autoboot machine code is loaded before you start a BASIC programming session on your machine. It has three distinct parts, each encompassing the previous parts

Firstly, the enhancer allows CSAVE programs to be named, and gives a VERIFY second, there is the utility package, giving RENUMBER, variable DUMP and AUTO line numbering

Lastly, there is a machine coder, for those wanting to include machine-code routines in their BASIC. Binary files may be saved and loaded, as well as verified

All three parts contain useful options, although the machine-coder is perhaps the least useful of the three Ace loads into 4K if all three parts are selected, and will remain in place until you switch off M F

instructions	90%
ease of use	80%
display	n/a
value for money	90%

★★★★

SYS 64 Spectrum £6.95

Vric, 196 James Reckitt Ave, Hull, N Humberside

For anyone familiar with 64 column displays, the 32-column Spectrum format seems rather cramped Here is a program to solve that Load it, and half width characters are printed on a 64-column basis Even listings appear at 64 characters per line

There was one slight snag with loading the tape to be precise, two First it was found that the 16K and 48K versions were on each other's sides of the tape and then it was found that LOAD "" was more successful than the recommended LOAD "CODE as it brought the machine code loading routine into action

The actual conversion program lies at the top of store, taking up nearly 2K of RAM (FA9 in 48K) It changes the interrupt mode so that it can poke its nose into the action and perform the necessary conversions These appear to be the replacement of normal character shapes by half width versions that are combined in pairs as single characters to be output The process is not without its difficulties Picking up the alternate screen calls for the clear screen command Command lines at the bottom of the screen appear in small characters at normal spacing

In general, the system works, though the narrow characters are not always as clear as might be wished. It also works on the printer, providing a PRINT action is called before each LPRINT. The character size can be switched from normal size to half size within a given display, and for new BASIC programs it gives useful added flexibility of presentation. D.T

instructions	70%
ease of use	80%
display	n/a
value for money	70%

★★★★

The Visual Processor £5.95

Colsoft, 30 Hawthorn Road, Barry, S Glamorgan CF68LF

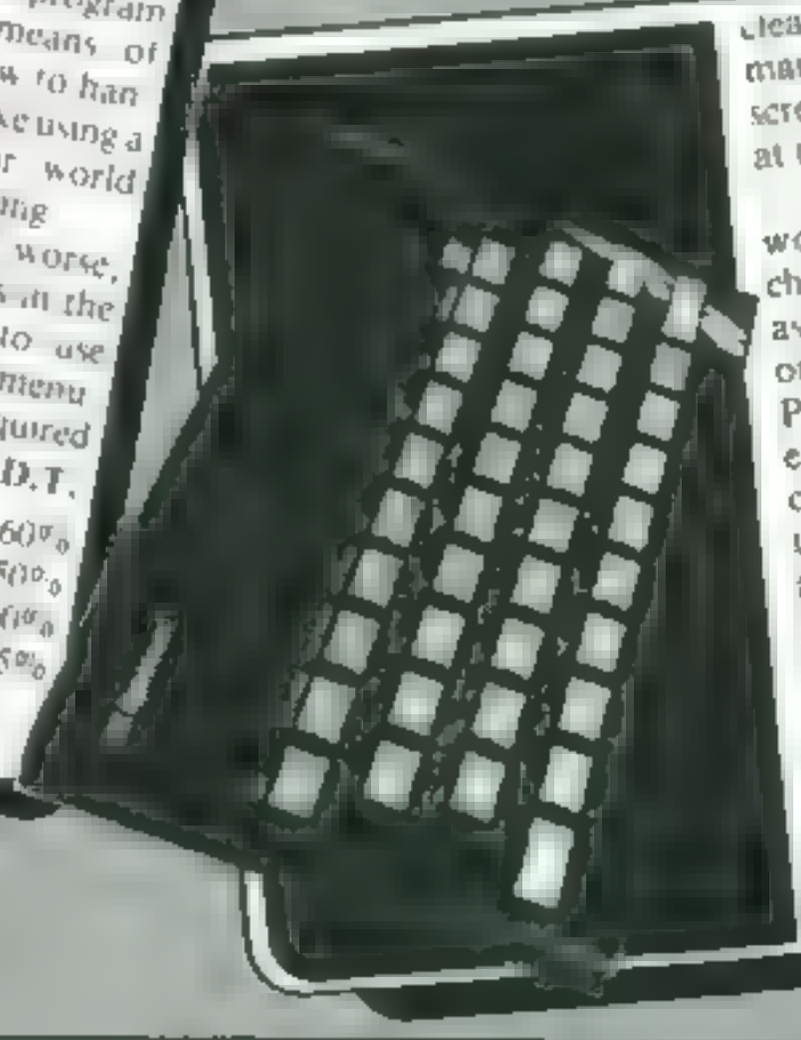
The idea behind the program is good, but the implementation is weak The action of an imaginary processor is simulated by a BASIC program, with provision for assembly, disassembly, store modification, and even save and load Since the maximum length of the simulated program is 32 locations, the latter provision seems unnecessary

Only sixteen instructions are available the memonics being LDA, STA, INA, OUT, ADD, NEG, LSL, LSR SBC, ADC, ROT, CMP, JMP, JNZ, JNC and HLT This offers very limited scope for program construction As a means of teaching a beginner how to handle machine code, it is like using a kiddie car to train for world championship motor racing

To make matters worse, there were inconsistencies in the coding The user, told to use 'end' to return to the main menu eventually finds that the required input is 'END'

instructions	D.T.
usability	60%
graphics	50%
value for money	60%
	15%

★



We'll teach you how to draw

Take Peter Shaw's advice and creating drawings will be a lot easier with your Oric. You'll find his sample program has a strangely familiar result

Although the result of this program has only a novelty value, the way in which it its final aim has other uses

I'm sure most Oric owners have played around with the graphics commands ovals, circles, frantically waving lines, the lot!

Armed with a Print 'n' Plotter jotter — they're not totally exclusive to the Spectrum — I first draw my initial design. One good thing about the Print 'n' Plotter jotters is that they are transparent, so you don't have to be an amazing artist. You can trace the design.

Hints on conversion

For computers such as the Spectrum just change CURSET to PLOT, and change every DRAW statement to DRAW -D1,-D2. Owners of other computers which only have absolute draw will have to re-write most of it, I'm afraid.

If you have looked at the listing, you will have noticed that each letter is treated as a single unit. This has two advantages. first, debugging is a lot easier, and secondly when a letter is used twice it is a lot easier to just edit the block and get all them looking the same rather than re-writing a new m and getting

Variables

D1 relative draw position (X value)

D2 relative draw position (Y value)

A loop to read information into D1 and D2

something which has no resemblance to the first one

In every unit (with only a few exceptions) there is a RESTORE, followed by a CURSET command which fixes the position on the screen where you're going to put the letter and then a loop which reads data in the part immediately following NEXT A

The information read into D1 and D2 is the X-Y relative draw positions of the next line. There are places were you can cheat a little, ie the e is a circle with a couple of points unplotted

With this information in mind, you can now type in the program, change it as you wish, and design your own personalised logo.

```
10 REM   Home
20 REM  Computing
30 REM    Weekly
40 REM  P.SHAW 1983
50 PAPER 0:INK 4
60 HIRES:INK6
70 CURSET 50,45,1
90 REM H
100 FOR A=1 TO 12
110 READ D1,D2:DRAW D1,D2,1
120 NEXT A
130 DATA 10,0,0,11,6,0,0,-11,10,0
140 DATA0,31,-10,0,0,-12,-6,0,0,12
150 DATA -10,0,0,-31
160 CURSET 86,67,0
170 REM o
180 CIRCLE 10,1:CIRCLE 4,1
190 REM M
200 CURSET 96,57,0
210 FOR A=1 TO 28
220 READ D1,D2:DRAW D1,D2,1
230 NEXT A
240 DATA 10,0,0,3,1,0,3, 3,4,0,1,1
250 DATA 1,0,3,3,3,-3,1,0,1,-1
260 DATA 3,0,4,4,0,15,-7,0,0, 13
270 DATA -1,-1,-2,0, 1,1,0,13
280 DATA -9,0,0,-13, 1,-1,-2,0, 1,1
290 DATA 0,13,-10,0,0,-19
300 REM e
310 CURSET 143,67,0
320 CIRCLE 10,1:CURSET 151,69,0:CURSET15
1,70,0
330 CURSET 151,68,0
340 FOR A=1 TO 8
350 READ D1,D2:DRAW D1,D2,1
360 NEXT A
370 DATA -12,0,0,1,2,2,1,0,1,1,5,0
380 DATA 1,-1,1,0
390 CURSET 146,64,1
400 FOR A=1 O 5
410 READ D1,D2:DRAW D1,D2,1
420 NEXT A
430 DATA -7,0,0,-1,2,-2,3,0,2,2
440 REM C
450 CURSET 49,76,1
460 FOR A=1 TO 33
470 READ D1,D2:DRAW D1,D2,1
480 NEXT A
490 DATA -4,-5, 1,0,-1,-1, 1,0,-1,-1
500 DATA -9,0, 1,1,-1,0, 1,1, 1,0
510 DATA -4,5,-3,6,0,10,2,4,3,3,5,3
520 DATA 1,1,9,0,4,-2,2,-2,1,0,1, 1
530 DATA -7,-7,-3,0,-1,1,-6,0,-1,-1
540 DATA-1,-1,0,-6,2,-2,6,0,3,2,7, 7
550 REMo
560 CURSET 60,94,0
580 CIRCLE10,1:CIRCLE 4,1
590 REM m
600 CURSET 70,84,0
610 FOR A=1 TO 28
620 READ D1,D2:DRAW D1,D2,1
630 NEXT A
640 DATA 10,0,0,3,1,0,3,-3,4,0,1,1
650 DATA 1,0,3,3,3,-3,1,0,1,-1
660 DATA 3,0,4,4,0,15,-7,0,0,-13
670 DATA -1,-1,-2,0,-1,1,0,13
680 DATA -9,0,0,-13,-1,-1,-2,0,-1,1
690 DATA 0,13,-10,0,0,-19
```

```
700 REM P
710 CURSET 107,8,1
720 FOR A=1 TO 20
730 READ D1,D2:DRAW D1,D2,1
740 NEXT A
750 DATA 10,0,0,2,1,0,1,-1,2,-1,4,0
760 DATA 1,1,1,0,4,5,1,1,0,6,-1,2
770 DATA -3,3,-1,0,-1,1,-7,0,-2-2
780 DATA 0,6,-10,0,0,-25
790 CURSET 122,94,0:CIRCLE 4,1
800 REM u
810 CURSET 134,84,1
820 FOR A=1 TO 16
830 READ D1,D2:DRAW D1,D2,1
840 NEXT A
850 DATA 8,0,0,13,1,1,2,0,1,-1,0,-13
860 DATA 9,0,0,18,-9,0,0,-2,-1,0
870 DATA -2,2,-4,0,-3,-1,-2,-2,0,-14
880 REM t
890 CURSET 157,84,1
900 FOR A=1 TO 17
910 READ D1,D2:DRAW D1,D2,1
920 NEXT A
930 DATA 10,-10,0,10,4,0,0,4,-4,0
940 DATA 0,8,1,1,1,0,1,-1,1,0,0,5
950 DATA -2,2,-8,0,-3,-5,0,-9,-1,0
 60 DATA 0,-4
 970 REM !
 980 CURSET 173,84,1
 990 FOR A=1 TO 4
1000 READ D1,D2:DRAW D1,D2,1
1010 NEXT A
1020 DATA 9,0,0,19,-9,0,0,-19
1030 CURSET 178,88,0:CIRCLE 4,1
1040 REM n
1050 CURSET 184,84,1
1060 FOR A=1 TO 14
1070 READ D1,D2:DRAW D1,D2,1
1080 NEXT A
1090 DATA 9,0,0,2,3, 2,4,0,3,2,1,1
1100 DATA 0,16,-8,0,0,-13,-1,-1,-2,2
1110 DATA 0,12,-9,0,0,-17
1120 REM g
1130 CURSET 214,84,1
1140 FOR A=1 TO 21
1150 READD1,D2:DRAW D1,D2,1
1160 NEXT A
1170 DATA 15,0,0,18,-1,2,-1,1,-8,4
1180 DATA -9,0,-4,-2
1190 DATA 0,-8,6,4,3,0,4,-3,0,-4
1200 DATA -3,3,-7,0,-3,-3,0,-7,1,-1
1210 DATA 0,-1,3,-3,1,0,5,0
1220 CURSET 215,89,1
1230 FOR A=1 TO 6
1240 READ D1,D2:DRAW D1,D2,1
1250 NEXT A
1260 DATA 4,0,0,4, 5,0, 1,-1,0, 1
1270 DATA 2,-2
1280 REM W
1290 CURSET 120,106,1
1300 FOR A=1 TO 14
1310 READD1,D2:DRAW D1,D2,1
1320 NEXT A
1330 DATA 4,0,3,9,3,-9,3,0,3,9,3,-9
1340 DATA 4,0,-5,15,-4,0,-2,-6,-1,0
1350 DATA -1,6,-4,0,-6,-15
1360 REM E
1370 CURSET 144,106,1
1380 FOR A=1 TO 12
1390 READ D1,D2:DRAW D1,D2,1
1400 NEXT A
1410 DATA 10,0,0,3,-7,0,0,3,7,0,0,3
1420 DATA -7,0,0,3,7,0,0,3,-10,0,0,-15
1430 REM E
1440 CURSET 156,106,1
1450 FOR A=1 TO 12
1460 READ D1,D2:DRAW D1,D2,1
1470 NEXT A
1480 DATA 10,0,0,3,-7,0,0,3,7,0,0,3
1490 DATA -7,0,0,3,7,0,0,3,-10,0,0,-15
1500 REM K
1510 CURSET 168,106,1
1520 FOR A=1 TO 20
1530 READ D1,D2:DRAW D1,D2,1
1540 NEXT A
1550 DATA 5,0,0,4,2,0,2,-2,0,-2,5,0
1560 DATA 0,4,-1,2,-2,2,2,2,0,1,1,1
1570 DATA 0,3,-5,0,0,-2,-3,-2,-1,0
1580 DATA 0,4,-5,0,0,-15
1590 REM L
1600 CURSET 183,106,1
1610 FOR A=1 TO 6
1620 READ D1,D2:DRAW D1,D2,1
1630 NEXT A
1640 DATA 4,0,0,11,5,0,0,4,-9,0,0,-15
1650 REM Y
1660 CURSET 190,106,1
1670 FOR A=1 TO 9
1680 READ D1,D2:DRAW D1,D2,1
1690 NEXT A
1700 DATA 4,0,3,3,,-3,4,0,-4,8,0,7
1710 DATA -5,0,0,-7,-5,-8
1715 GOTO 1800
1720 MUSIC1,RND(1)*3+2,INT(RND(1)*10)+1,
0:PLAY1,0,1,RND(1)*999
1723 FORA=1TO7
1730 INK A
1740 WAIT 10
1750 NEXT A
1760 GOTO 1720
1800 LET X$="   Best for software - ever
y week    "
1810 FR A=1 TO 37
1820 CURSET 6+(6*A),150,0
1830 CHAR (ASC(MID$(X$,A,1))),0,1
1840 NEXT A
1845 PRINT:PRINT:PRINT
1850 GOTO 1720
```

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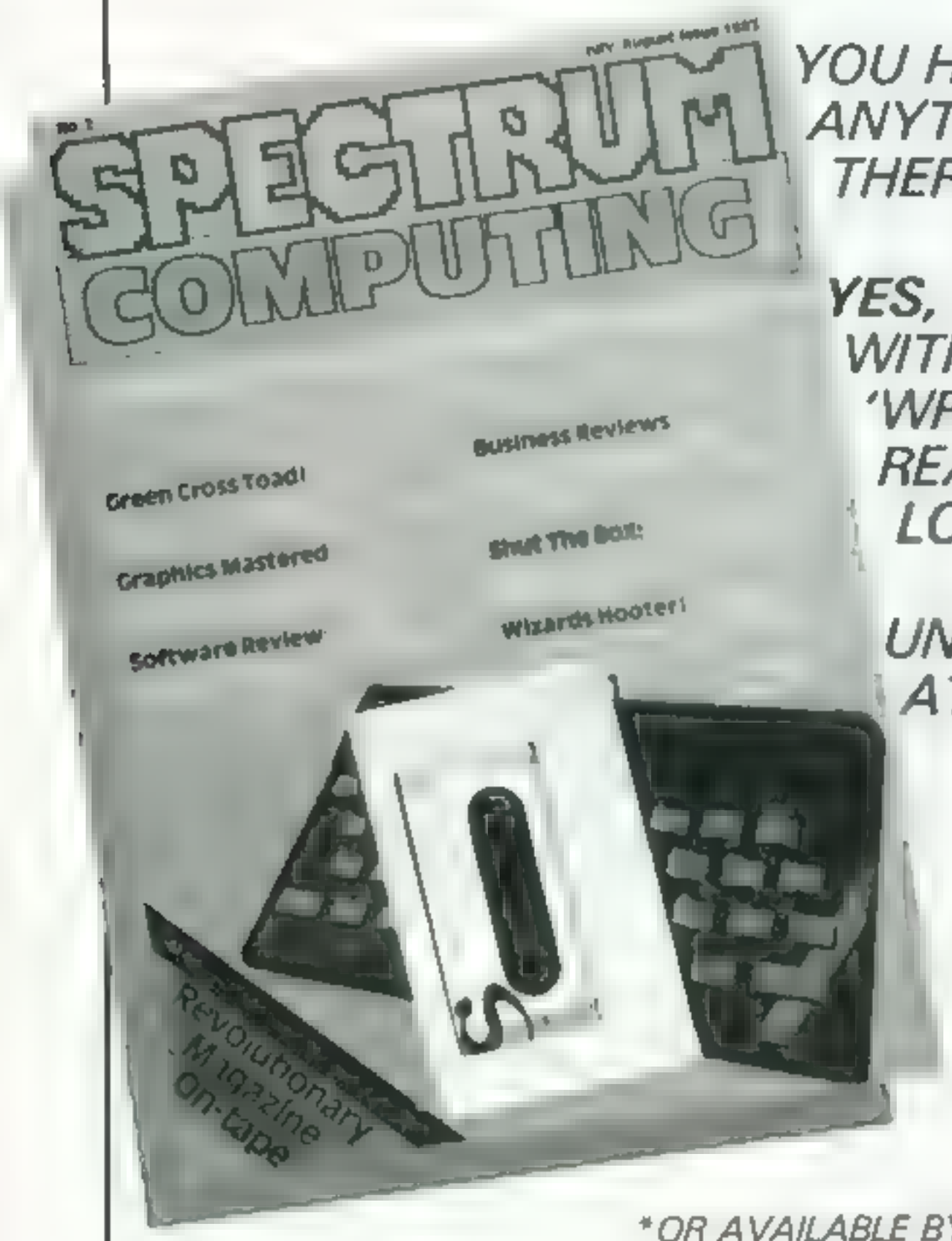

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[illegible] The Green Ashbyde la Zouch Leics LE6 5JU

Psst is a manoeuvering and shooting game set in the back garden with Robbie the robot.

An evil flower is growing guarded by Robbie but unfortunately nasty bugs are set on eating Robbie's flower. Each special bug requires a different type of spray to eliminate it.

The flower will blossom if bugs can be kept away from it. With 8 levels, you have to clear the next level where there are more and different forms of nasties.

Compost bags, fly swatters and watering cans will increase your score if you pick them up.

Graphics are smooth moving and colourful and the sound effects are cheerful after that it's noisy. You can use keyboard or Kempston sticks.

Overall an addictive game.

ease of use	90%
playability	90%
graphics	90%
value for money	90%

★ ★ ★ ★ ★

Robon £5.95

Softek, 329 Croxteth Road, Liverpool L8 0SA

The hardware with this program is one that I've always modelled on Berserk, so at least you know what you're getting.

To the uninitiated the game is based on a series of mazes made up with electrified fences. Touch one and ZAP! You are pursued by a number of Robons who not only must avoid the fence but use your laz'com.

Unless caught you then lose a life. Dodging and weaving is the legally recommended way of increasing your chances but beware! The Robok is waiting to appear. If you hang around too long one does. KAPOW! Another life bites the dust. Lots of mazes to challenge the skilful.

Rather superior graphics mark this game. The assaults on the senses are [illegible]

Once the learning curve has been tackled it's time to change the speed. You may not think Combat Zone is very hard but it needs a cool head and a steady hand to complete the game.

instructions	95%
playability	95%
graphics	95%
value for money	95%

★ ★ ★ ★ ★

3D-Combat Zone 48K £5.95

Ablex, 306 James Reckitt Ave, Hull N Humberside HU8 [illegible]

[illegible] Combat Zone is a [illegible] game. The player is seated in the cockpit of a fighter and must destroy a number of enemy craft. Each time you are hit your shields are weakened and if they are destroyed you lose a life. Once all your lives are lost the game is over.

Fortunately there are [illegible] to help you. Extra shields, weapons and fuel can be picked up by flying over them. Fuel is important as it is used up at a rate of knots.

The 3D graphics are [illegible] used to make it look more like a real battle. Sound effects are [illegible] and there is a [illegible] of tunes to choose from.

Combat Zone is a fairly challenging game which will appeal to arcade fans.

instructions	80%
playability	85%
graphics	75%
value for money	75%

★ ★ ★

Megapede £5.95

Softek, 329 Croxteth Road, Liverpool L8 0SA

Megapede is based on the caterpillar and the spider theme. Megapede weaves its way towards you through the mushrooms.

At various points the centipede is hampered by the appearance of the deadly Sid the Spider and Scorpi the scorpion who drops deadly fleas.

The game itself is an all colour, all action affair with sound. The graphics are well done but not animated in the strict sense of the word — they tend to scroll around the screen instead.

The gameplay is however so smooth that you have to work hard to realise what's happening. The speed can be altered but I suspect that both of these factors are related to gaining the extra points for the various Spectrums. There's a [illegible] which can be [illegible]

instructions	90%
playability	80%
graphics	80%
value for money	80%

★ ★ ★ ★

Cosmic Debris 48K £4.95

Visic, 366 James Reckitt Ave, Hull N Humberside HU8 [illegible]

Good news! Now that you have managed to get a job as a spaceship commander, a wonderful asteroid belt has appeared. Your mission is to destroy the asteroids in order to [illegible] and to avoid collisions with other spaceships.

Debris is presented in attractive 3D graphics. Other features include a choice of one or two player games, a high score record and [illegible]

Debris is a fast moving game and a challenge to play.

instructions	75%
playability	65%
graphics	70%
value for money	65%

★ ★ ★

Unless you're blessed with the speed of a lightning reflex and fingers like a concert pianist, you'll find Cosmic Debris a bit too fast for comfort. Debris is a game that requires a cool head and a steady hand to complete.

Debris is a fast moving game and a challenge to play.

Good news! Now that you have managed to get a job as a spaceship commander, a wonderful asteroid belt has appeared. Your mission is to destroy the asteroids in order to [illegible] and to avoid collisions with other spaceships.

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Debris is a fast moving game and a challenge to play.

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Playing around with your VIC

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Catcha Snatcha £5.50

Imagine, Masons Buildings, Exchange St East, Liverpool

A disappointing game which could have been interesting, if a bit more time had been spent ironing out the bugs

As a store detective you must patrol the corridors of your store preventing shoplifters from perpetrating their wicked deeds Your duties also include returning lost property to the lost property office and disposing of the occasional parcel bomb

Graphics and animation are good, but a bug causes the player to occasionally leave a trail of debris behind him. This stops the game and requires reloading to continue

Another fault is that at six o'clock on the store clock the rush hour starts. Then the shoplifters speed up so much that you can only stand and watch as your score falls and falls until the game is over. When a new game begins you are back in the middle of the rush hour again

M.B

instructions	70%
playability	30%
graphics	85%
value for money	40%

★ ★ ★

Innovative Cassettes 1-3 £5.95 each

Melbourne House, Glebe Cottage, Station Road, Cheddington, Leighton Buzzard, Beds LU7 7NA

Several games on one cassette sounds like good value for money until you take into account other factors — like quality

These three games compilations are sadly lacking in this respect. Written in BASIC, they are very slow and lacking in detail Small children — no older than eight might enjoy the strange sounds and bright colours, but for anyone older, they're a definite no-no

All the games on the Innovative Cassettes are available in book form, where they are arranged to teach BASIC programming techniques to beginners to computing while entertaining at the same time. Fair enough

With this in mind, the book is much better value for money than the cassettes.

M.B.

instructions	60%
playability	20%
graphics	20%
value for money	10%

★

Cyclons 8K or 16K £9.95

Rabbit Software, 380 Station Road, Harrow, Middlesex

Yippee! An invader game with a new scenario Excuse the outburst but new ideas are a rarity nowadays

Consider an asteroids-type arrangement in which you and the aliens float about the screen You attempt to shoot the aliens by firing in any of the eight standard directions The opposition will either shoot back or try to ram you

As you kill an alien, it is replaced with a new one. The numbers increase as you survive In the higher levels, nasty homing aliens appear and they are tough to deal with.

You can select one of three options These are fast start (to skip the easy bits), bouncing bullets and landscape The last option draws a range of hills along the bottom of the screen Colliding with this results in death. You can select any of these options in any combination to give the difficulty of your choice

A.W.

instructions	65%
playability	75%
graphics	85%
value for money	80%

★ ★ ★ ★

Cosmic Fire Birds 8K or 16K £9.95

Solar Software, 51 Meadowcroft, Radcliffe, Manchester M26 8JP

I suspect that Solar must be suffering from a plague of bad tapes since I had no end of trouble getting this program up and running. Solar were most helpful and supplied a second tape in record time. This tape was no better. As a consequence this review is based on only one test session.

This game is a sort of invader cum galaxian cum phoenix game in which you try to repulse hordes of different alien species There are four different types of nasties with differing modes of violence and different point values. You have five initial lives with which to slice up as many of the opposition as possible

The use of colour and graphics were up to a good standard and the aerobatics of the aliens were quite amazing. The game is of progressive difficulty with each level imposing greater amounts of anguish

A good but slightly over-priced game.

A.W

instructions	85%
playability	85%
graphics	85%
value for money	65%

★ ★ ★ ★

Pakacuda £5.99

Rabbit Software, 380 Station Road, Harrow, Middlesex

This is a rather jolly version of Pacman involving the consumption of lots and lots of fish

Not only fish, but eel-type things as well. It doesn't tell you in the instructions, but somehow you will probably work out that eating the eels causes the hunters — some unsavoury octopi — to become hunted (ie eaten)

Joystick only, which I think is a bit of a shame. Not that I dislike waggling a joystick, you understood, but keyboard control allows finer movement

If you are looking for a Pacman look-alike, this one is about average If you really sweat at the thought of fish, look no further

T.D

instructions	45%
playability	70%
graphics	75%
value for money	65%

★ ★ ★

Brain trainers for your ZX micro

Whether you teach others or teach yourself, you'll want to use Ray Elder's programs for the ZX81 and Spectrum. Type them in to test general knowledge — and sharpen up mental arithmetic

Practice makes perfect in learning any subject and if practice is what you need, a micro is the ideal way to get it. It never gets tired or bored or loses its temper, and it's fun to use as well.

My first program is designed to ask questions on any subject or topic. At the moment it's set up for general knowledge, but you can change the questions simply by changing lines 200 to 780.

The format is easy: the first line asks the questions, the second stores the correct answer in Q$, and the third line RETURNS to the main loop.

I've written the program to choose 10 random questions from a possible 20, ensuring that there is no repetition per run.

How it works

50-93 asks which type of sum is required, difficulty level and speed (length of time for answering). These are stored in W$, A and D respectively.
97-110 set variables according to levels inputted. X and Y become limits for random numbers.
120 sets up loop J to give 10 questions.
130-140 get two random numbers (A and B) to limits of X and Y.
150-170 check for valid sums, depending on type, to give positive integer answers.
180 puts sum into a string (S$).
200-210 print the sum.
220-290 empty A$, set up loop I to time specified by input D, get input by INKEY$ (stored in Q$). If key D is pressed, then delete last character (number) entered. Spectrum version should also include OR Q$="d" THEN... Checks valid key, if OK adds it to A$ and prints it.
300 stores the value of the correct answer as a string in Q$ ready for checking.
310 calls checking subroutine.
320 goes back for next sum if less than 10.
330 calls end routine, but at 3500 first to modify display.
9500- - print additional information before jumping to standard routine at 9110.

```
 10 REM * QUESTIONS/ANSWERS *
 15 REM **********************
 20 PRINT "WHAT IS THE CAPITAL
OF ENGLAND ?"
 10 LET Q$="LONDON"
 20 RETURN
 30 PRINT "IN WHICH COUNTY IS B
RISTOL ?"
 40 LET Q$="AVON"
 50 RETURN
 60 PRINT "NAME THE RIVER WHICH
 FLOWS       THROUGH LONDON"
 70 LET Q$="THAMES"
 80 RETURN
 90 PRINT "WHEN WAS THE BATTLE
OF HASTINGS?"
300 LET Q$="1066"
310 RETURN
320 PRINT "WHICH TREE PRODUCES
ACORNS ?"
330 LET Q$="OAK"
340 RETURN
350 PRINT "WHAT IS THE STREET I
N WHICH THE PRIME MINISTER LIVES
 ?"
360 LET Q$="DOWNING"
370 RETURN
380 PRINT "HOW MANY IS A DOZEN
?"
390 LET Q$="12"
400 RETURN
410 PRINT "WHAT COUNTRY IS AMST
ERDAM THE    CAPITAL OF ?"
420 LET Q$="HOLLAND"
430 RETURN
440 PRINT "WHAT IS THE CAPITAL
OF FRANCE ?"
450 LET Q$="PARIS"
460 RETURN
470 PRINT "NAME THE FAMOUS BRIT
ISH PLANE OFTHE BATTLE OF BRITAI
N"
480 LET Q$="SPITFIRE"
490 RETURN
500 PRINT "WHO IS REMEMBERED ON
 NOVEMBER 5"
510 LET Q$="GUY FAWKES"
520 RETURN
530 PRINT "WHICH SPORT IS ASSOC
IATED WITH   WALES ?"
540 LET Q$="RUGBY"
550 RETURN
560 PRINT "WHICH BIRD IS ASSOCI
ATED WITH    SPRINGTIME ?"
570 LET Q$="CUCKOO"
580 RETURN
590 PRINT "HOW MANY IS A SCORE
?"
600 LET Q$="20"
610 RETURN
620 PRINT "WHERE IS MOUNT SNOWD
ON FOUND ?"
630 LET Q$="WALES"
640 RETURN
650 PRINT "HOW MANY IS A GROSS
?"
660 LET Q$="144"
670 RETURN
680 PRINT "HOW MANY WIVES DID
    KING HENRY VIII HAVE
 ?"
690 LET Q$="6"
700 RETURN
710 PRINT "WHO LED THE ROUNDHEA
DS ?"
720 LET Q$="OLIVER CROMWELL"
730 RETURN
740 PRINT "WHAT DOES H.M.S.O. S
TAND FOR ?"
750 LET Q$="HER MAJESTIES STATI
ONARY OFFICE"
760 RETURN
770 PRINT "WHO GOT THE TEN COMM
ANDMENTS ?"
780 LET Q$="MOSES"
790 RETURN
```

My second program gives drill-type practice on the four rules of number.

How it works

50 sets up C$ to 20 spaces.
60-90 clear screen, select a random number, check it has not been asked before (line 80), and set C$ to X as a flag that the question has been used.
100 sets the PRINT position.
110 gosubs for question.
120 gets answer in A$.
130 gosubs checking routine.
140 checks for 10 questions asked. If not, go round again.
150 gosubs for end routine.

```
 50 DIM C$(20)
 60 CLS
 70 LET R=INT (RND*20+1)
 80 IF C$(R)="X" THEN GOTO 70
 90 LET C$(R)="X"
100 PRINT AT 5,0;
110 GOSUB 170+R*30
120 INPUT A$
130 GOSUB 9000
140 IF G<10 THEN GOTO 60
150 GOSUB 9100
160 GOTO 50
190 REM **********************
```

ZX PROGRAMS

```
  10 LET G=0
  20 LET S=0
  30 PRINT AT 5,4;"PLEASE ENTER
YOUR NAME";TAB 6,"AND PRESS NEW
INE."
  40 INPUT N$
  50 PRINT AT 9,0,"DO YOU WANT M
E TO  SUTRACT,TIMES  OR DIVIDE ?
PRESS  +  -  * OR /)"
  60 INPUT W$
  70 PRINT AT 12,0;"ENTER LEVEL
OF DIFFICULTY 1 TO 6        ( 6 I
 THE HARDEST )"
  80 INPUT A
  85 IF A<1 OR A>6 THEN GOTO 70
  90 PRINT AT 14,0,"ENTER SPEED
1 TO  5  (5=SLOWEST)"
  93 INPUT D
  95 IF D<1 OR D>5 THEN GOTO 90
  97 LET D=D*10
 100 LET A=9+(90 AND A=1)+(900
ND A=6)
 110 LET A=9+(90 AND A=2)+(900
4)+(900 AND A=6)
 117 REM **********
 118 REM * MAIN LOOP *
 119 REM **********
 120 FOR J=1 TO 10
 130 LET B=INT (RND*A+1)
 140 LET C=INT (RND*A+1)
 150 IF W$="-" AND B<C THEN LET
B=B-C
 160 IF W$="/" AND B<C THEN LET
B=B-C
 170 IF W$="/" THEN LET B=INT (B
/C)*C
 180 LET S$=STR$ B+W$+STR$ C
 190 CLS
 200 PRINT AT 2,5,"SUM ";J
 210 PRINT AT 5,13,S$," ="
 220 LET A$=
 230 FOR I=1 TO D*2
 240 LET G$=INKEY$
 250 IF G$="" THEN GOTO 240
 260 IF G$<"0" OR G$>"9" THEN GO
TO 260
 270 LET A$=A$+G$
 280 PRINT AT 5,14+LEN S$;A$
 290 NEXT I
 300 IF W$="-" AND VAL A$<0 THEN
 GOSUB 9000
 310 IF W$="/" AND A$="0" THEN G
OSUB 9000
 320 NEXT J
 330 GOSUB 9500
 340 GOTO 120
 350 REM
9500 CLS
9510 PRINT TAB 10;"MATHSPEED"
9520 PRINT "LIFE=";W$;"LEVEL";A
9530 PRINT "SPEED=";D/10
9540 GOTO 9510
```

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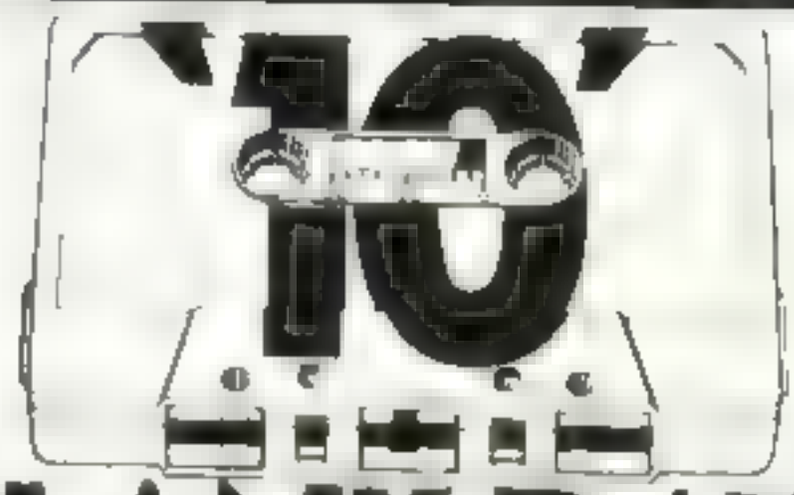

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Top Ten programs for the Dragon-32

1	The King	Microdeal (1)
2	Talking Android Attack	Microdeal (–)
3	Nightflite	Salamander (–)
4	Dragon Trek	Wintersoft (–)
5	Space Wars	Microdeal (3)
6	Graphics System	Salamander (–)
7	Katerpillar Attack	Microdeal (6)
8	Chess	Dragon (7)
9	Mined Out	Quicksilva (–)
10	Typing Tutor	Dragon (–)

Compiled by Boots. Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	Flight Simulation	Psion
2	Football Manager	Addictive
3	Fantasy Games	Sinclair
4	1K Games	Sinclair
5	Defender	Quicksilva
6	Chess	Sinclair
7	Asteroids	Quicksilva
8	Scramble	Quicksilva
9	Space Raiders	Sinclair
10	Ship of Doom	Sinclair

Compiled by Boots. Figures in brackets are last week's positions

Top Ten programs for the VIC-20

1	Arcadia	Imagine (2)
2	Wacky Waiters	Imagine (4)
3	Catcha Snatcha	Imagine (5)
4	Asteroids	Bug Byte (7)
5	Panic	Bug Byte (1)
6	Cosmiads	Bug Byte (3)
7	Kaktus	Audiogenic (–)
8	Hoppitt	Commodore (–)
9	Mangrove	Audiogenic (–)
10	Amok	Audiogenic (6)

Compiled by Boots. Figures in brackets are last week's positions

Top Twenty programs for the Spectrum

1	Penetrator	Melbourne House (1)
2	Flight Simulation	Psion (2)
3	Jet Pac	Ultimate (3)
4	Transylvanian Tower	Richard Shepherd (4)
5	The Hobbit	Psion/M. House (5)
6	3D Tanx	dk'tronics (6)
7	Ah Diddums	Imagine (7)
8	Horace Goes Skiing	Psion/M. House (7)
9	Hungry Horace	Psion/M. House (9)
10	Chess	Psion (10)
11	Planetoids	Psion (11)
12	Test Match	Computer Rentals (12)
13	3D Tunnel	New Generation (13)
14	Ground Attack	Silversoft (14)
15	Time Gate	Quicksilva (15)
16	Orbiter	Silversoft (16)
17	Arcadia	Imagine (17)
18	Starship Enterprise	Silversoft (18)
19	Horace and the Spiders	Psion/M. House (–)
20	Pssst	Ultimate (20)

Compiled by W. H. Smith. Figures in brackets are last week's positions

Whiz Kids show to go ahead

A few weeks ago I mentioned that a pilot film had been produced, called Whiz Kids, which was to be the possible forerunner of a TV series of the same name

Well, it turns out that CBS (a major American commercial network) is planning to make a series out of the idea, regardless of how well the pilot show does. This is very unusual, as networks typically wait for the poll results before committing themselves to such a financial burden

Apparently preliminary testing has resulted in a favourable response to the pilot, and anyway CBS want to be the first network out with an action show in which the personal computer features heavily

As I also mentioned in the previous column, the show will feature kids fighting crime with the use of computers, and will show technology (according to the producer) realistically but slightly ahead of state of the art

That will be interesting all in itself. With giant strides being made so rapidly, slightly ahead when the series is shot may be slightly behind when it is finally shown. I shall let you know how it all turns out come September

Coleco, the American video game company, stole the show at the recent Summer Consumer Electronics Show in Chicago. Their new home computer, the Adam, includes 80K of RAM, tape drive, a word processor in ROM, and a letter quality printer, all for under $600!

As anticipated, the computer is designed to be an extension of the already available Coleco video game player, and all software and games are compatible between game player and computer. Present owners of the game player can update for about $400.

The Adam uses a Z80 which addresses 64K, and a TI device that is designed to drive the 16K RAM devoted to screen graphics. The printer and the keyboard each have their own processor chips too

Rather than go head to head with other small computers, Coleco has concentrated more on the software end. Contrasting with other computers of similar price which come up in BASIC, when a user powers up the Adam, the resident word processor called Smart Writer comes up

This program allows a 78 column display, and functions very closely resembling those available on a conventional typewriter

A 64K expansion module is also planned. The company says this will allow versions of, say Donkey Kong, with more features than the arcade version with excellent graphics

Adam will get plenty of software from a type of cassette called digital data packs. This looks like a conventional cassette machine, but stores data digitally rather than by analog methods. According to Coleco, this allows for a data transfer rate rivalling the floppy disc. Each pack could store as much as 500K, which translates to about 250 text pages

Interestingly enough, the Adam will come with a version of BASIC on data pack that will be source compatible with Applesoft. Since more Apples are used in schools than any other single brand of computer here, Coleco's thoughts run along the lines that Johnny and Mary can write programs at school on the Apple, and bring them home to run on the Coleco. Sort of like getting a less than half price Apple

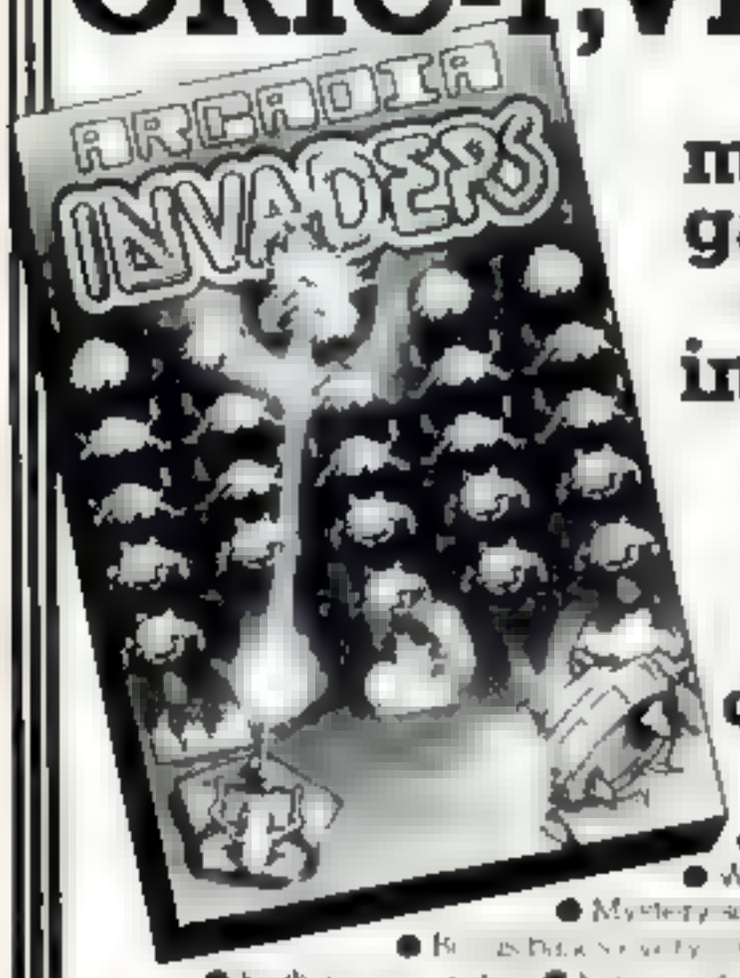
Regarding the letter quality printer, it uses a standard daisy wheel, and will be able to print up to 80 columns. Coleco is claiming 120 words per minute throughput

Even with all the hoopla at its so-called debut, company officials did not deny that the exact specs for the machine were still not firm, and that they will be unable to meet demand for some time to come. Still, the machine sounds like it will be capable of doing many things very well for such a low price. I shall look forward to seeing an actual unit

That's all for this week. See you next time

Bud Izen — **Fairfield, California**

ORIC-1, VIC-20



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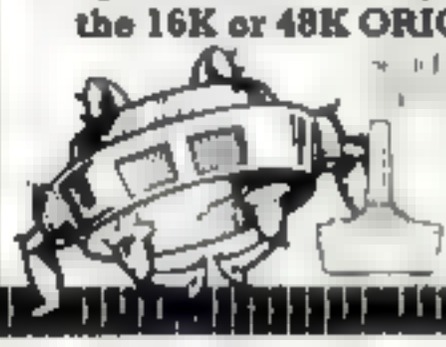

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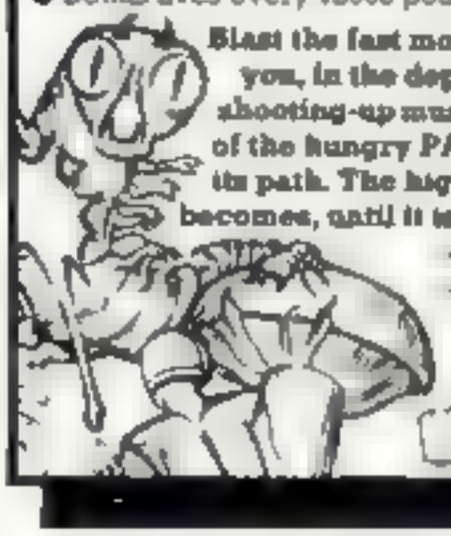
[illegible]



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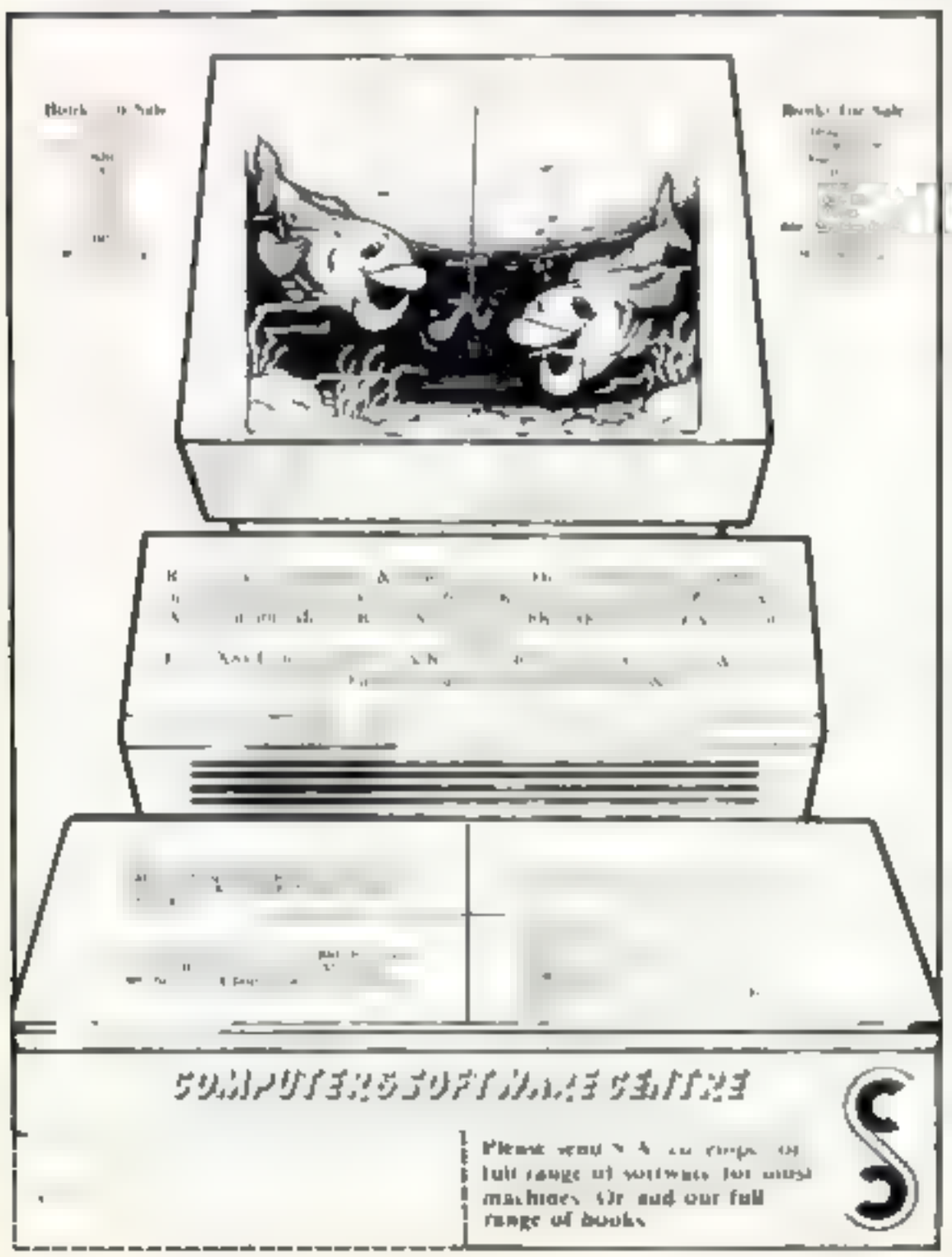

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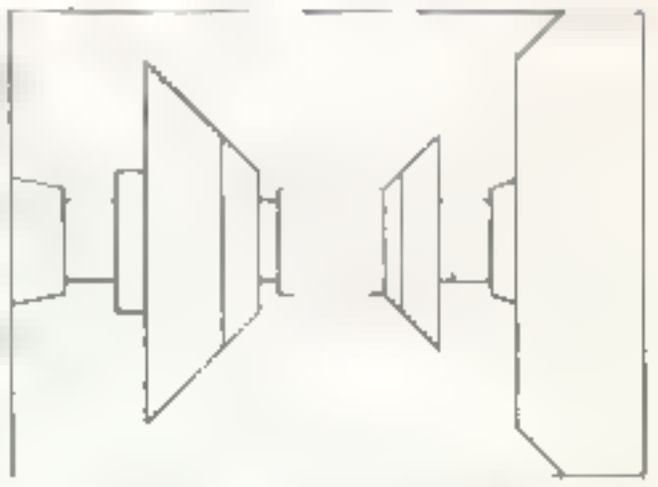

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Activate Neutralise

The gremlins seem to have got at my Atari program, published on p 25 of HCW 15, and taken away line 5020. The missing line is as follows

```
5020 FOR A=15 TO 0 STEP
     1 SOUND 0,75,10,A
     FOR E=1 TO 5 NEXT E
     SOUND 0,0,0,0 NEXT A
     GOTO 1000
```

David Ryan, Bannbridge, N. Ireland

TI's software shortage

I am writing to congratulate you on the TI-99/4A program published in your March 29-April 4 edition, entitled "Playing around with pixels". I would like you to extend my admiration to the compiler, David Gray

The expertise, extended conception and imaginative projection shown in the construction of this program are in my opinion truly outstanding Indeed, my grandchildren use it as a construction game, although I have noticed the elder one (aged 9) making semi secretive notes to the hexadecimal codes of her favourite creations For future reference, I presume

Now my plea. As you may well know, there is a desperate shortage of cassette software for the TI. Many of the few cassettes offered are repros from Vince Apps book "35 programs for ...." and with all due respect to Mr Apps, who knows his stuff, the programs in this book are for the struggling novice to insert himself, and therefore more than a little on the simple side

The TI is being promoted on TV and in the High Street shops at present, and this, coupled with price reduction and cutting plus the £50 value free offer, is bound to increase the number of TI owners, many, like myself, incapable of originating really first class progs

There are cartridges of course, but these are too expensive for us low budget enthusiasts to buy and in any case, I feel sure that some of us would welcome progs more mind challenging than Space Invaders or Mazes

So .. **please** ... could not the talents of the writer of the Pixel prog , or any others with similar capabilities, let us have some interesting stuff for the TI 99/4, this nice little machine that has been so dreadfully neglected by the cassette software producers

John Woods, Halifax, West Yorks

HCW has now started to publish reviews of some TI software which we hope will be of use to TI owners

A satisfied customer . . .

Ever since your first edition people have been writing in to complain about ordering software and hardware by mail order and receiving poor goods and poor service

Another issue that was discussed in early editions was the forthcoming shakeout in the software market, with predictions that a lot of small firms are going to find it hard and go out of business

As you may or may not know, nearly all small firms are mail order only operations. All these complaints make the business look untidy and disorganised this is very damaging and can scare potential customers away

I have only seen about two letter of praise for computer firms in your magazine, and the same applies to other magazines

so much complaining and not enough praise

I have had great service from all mail order firms I have dealt with. I have never had to wait longer than a week for anything I have ordered, and I would particularly like to congratulate Texas Instruments on their service. If you bought a TI-99/4A before 31 January this year you could claim for a £50 rebate Within two weeks I received a cheque for £50, and I consider this great service

A. Tanner, Headington, Oxford

. . . But one's not so happy

I recently bought a TI-99/4A and, feeling very proud, sent off for my free offer of the speech synthesizer and games paddles with Basic cartridge and booklet It was quite a saving on the price for me

But sad to say I am still waiting. We did not realise that on some of the computers, the serial numbers have not been stamped in, and the company wouldn't accept the order without a serial number

After telling Texas Instruments twice and informing the shop. I am still waiting to find out what's happening

Are the computers really made in Texas? How come only a few slipped through the net?

T. Wilkins, Birmingham

Kirsty Clift of TI said "Most of the TI 99 4A for the UK market come not from Texas but from Rieti, Italy, and it was a change in the manufacturing process there that caused the trouble

The few computers that were sent out without a serial number stamped on did have a sticky label with a date code number, though, and if your computer hasn't got a serial number, the date code number will do just as well for the offer

"We've had some confusion over our free offers, and I'd just like to make it clear that there are two of them The first is for free games paddles, a games cartridge and a Basic tutor cassette, and is available if you brought a TI 99 4A between May 3 and July 2

The second is for a free speech synthesiser or a free program recorder, and is available for those who bought six TI plug in games cartridges between April 30 and July 2

Review it again, T.D.

I m writing to congratulate T D (whoever he may be) on his brilliant write-up of Crazy Climber/Apple Bug in HCW 15 It was witty, informative and very eye-catching

I only wish more magazines would do it this way It would make the reviews so much more enjoyable to read

A. MacDonald, Sudbury, Suffolk

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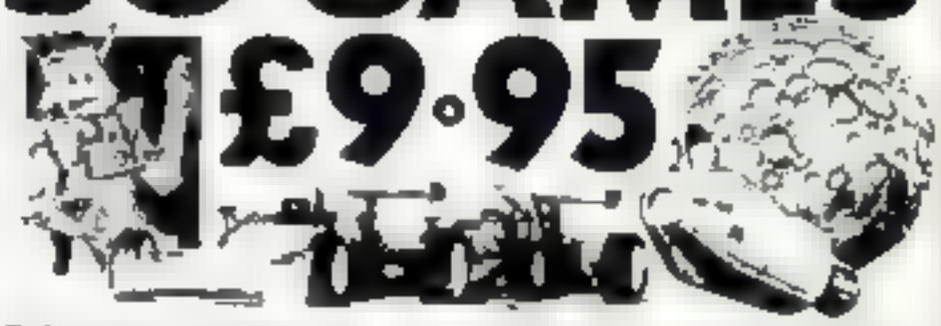

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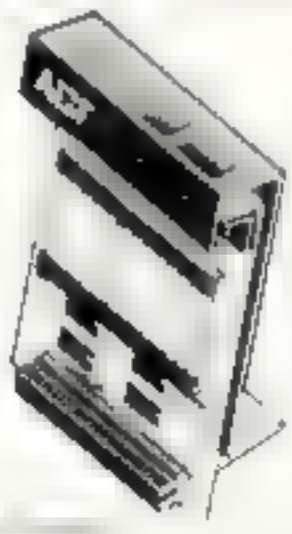

JOYSTICKS

PROFILE

Best of British programming?

English software is flying the flag in the US-dominated Atari software market. Its boss Phillip Morris talked to Candice Goodwin about his plans not just to compete in the market but to lead it

Considering the number of software companies there are in the UK, it may seem eccentric of Philip Morris to have called his firm, The English Software Company. But then, you've got to remember that he had the American market in mine

He said: "Americans are very keen on English people and products. I think it's because of the Royal Family".

English's original logo — a cottage in a rose garden — was designed to have transatlantic appeal. For UK buyers, though, Phillip has dreamed up a more high-tech logo with a video effect He said; "In this country, cottages are associated with cottage industries — which seems a bit silly since we're in the middle of Manchester".

English is an offshoot of Phillip's shop, Gemini Electronics, and shares the same premises at 50 Newton Street, Piccadilly, Manchester. Gemini sells computer chess games, Atari games machines, Commodore and Atari micros and a range of software.

Gemini itself developed out of an earlier business Phillip had selling computer games machines by mail order — so he's been in the computer games business in one way or another since 1978

But the idea of selling his own brand of software was sparked off by one of Phillip's customers, Steven Riding. Having bought an Atari micro for Gemini, Steven got interested in machine code programming. The result was Airstrike, a cross between Scramble and Defender.

Steven offered Airstrike to Philip, who started to sell it by mail order as well as through the shop. But he also had the bright idea of trying to beat the Americans at their own game by selling Airstrike in the US — where the Atari is, of course, a giant seller.

So last summer Phillip's brother Brian set off to seek the company's fortune in sunny California — and that's when the name and logo were originated

The made-in-England theme extends to Phillip's programming team, which he describes as "the best of British programmers". But finding good programmers has been and continues to be a problem.

The problem is that the Atari uses three separate processors it has special sound and graphics processors in addition to the main processing chip. Most home micros only use one all-purpose processor

So would-be machine code programmers have to understand how the three processors work together, as well as knowing how to make the most of each processor's special abilities.

"You have to learn a lot more about the Atari before you can program it", according to Phillip "It can take six months to write a program from scratch."

A lot of Phillip's programmers got interested in programming when they bought an Atari from him. He reckons that, although most people initially buy the Atari micro for games, they start programming because of the machine's potential — among other things, it can give you 256 colours on screen at once. But that's not so surprising when you remember that it uses the same chips as the Atari arcade machines

As well as Airstrike, English Software's range now includes four more games, on disc as well as cassette, and three utilities. Six more games are scheduled for the end of July, which will be on cartridge as well as cassette.

By the end of the year, Phillip thinks English will be the largest Atari software house in the UK — apart from EMI, that is. He wants to give Atari owners a better deal firstly by informative advertising, with a screen picture and description of every game, and secondly by competitive pricing

English cassette games cost £15 95 — about a third cheaper then equivalent US products — and in the long term he hopes to bring the price of cartridges down from £30 to around the £20 mark. "Mass production plus new types of chips will mean that cartridges will soon be cheaper to produce", he said.

Phillip also plans to explore the demand for very low-priced games for the Atari later in the year, by offering two or three games for £5 if they are bought along with a £15 game. But he said he didn't intend to lower his standards

"Atari owners are very selective in what they buy", he said. "They might buy five games a year, instead of one a week like you would for the Spectrum. But those five games will have lasting appeal." High-quality graphics and an original theme is what he is aiming for in all English's games.

The pick of the English crop will go over to the States to tackle the Atari software market on its home ground. Though the competition over there may be formidable, the potential is enormous, with over half a million Atari machines to cater for.

And when Atari brings out its new machines, which are compatible with the 400 and 800, that potential will increase still further.

Meanwhile, back in the UK, English Software's programs will be appearing on television in the north east this August. Granada TV will be featuring Xenon Raid as the competition game on its Chip-In series.

"The programme is being made in Granada's Liverpool studios", Phillip said, "So we changed the backdrop of Xenon Raid to look like the Liver buildings."

Pointing the way to new trends in Atari software: from left to right, Steve Riding, John Brierley, and Philip Morris himself

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I would like to acknowledge cheque and say how much I appreciate your integrity. J.M., Scotland

Many thanks for your system, it is all you say and more. J.C., Lancs.

Your wonderful system won me £3,527. I intend to visit London soon and will be able to come and see you personally. (Overseas Client) P.M., Kampala.

Many thanks for trying so hard to please us all, your brother should be thanked also. One of our daughters, WHOSE HUSBAND YOU HELPED ENORMOUSLY, has just phoned, the four of them have just spent a lovely holiday in Spain. K.R., Isle of Man.

I won on my FIRST entry last week and won 2nd and 3rd dividends, as you will see from the enclosed certificate. One more and I would have collected over £400 for FIRST dividend. Once I've won a few amounts I shall be staking from winnings and at 3p per line, A FIRST DIVIDEND last week as this would have been over £3,000. C.A., Yorks.

I am very interested indeed and enclose £20 herewith. I agree to pay you the balance of £55 ONLY if I win at least THREE FIRST TREBLE CHANCE DIVIDENDS in my first 20 weeks of entering — otherwise I owe you NOTHING FURTHER at any time — no matter how much money I win. My Signature below is my Undertaking to retain complete and absolute confidence about the method.

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Signature HCW19

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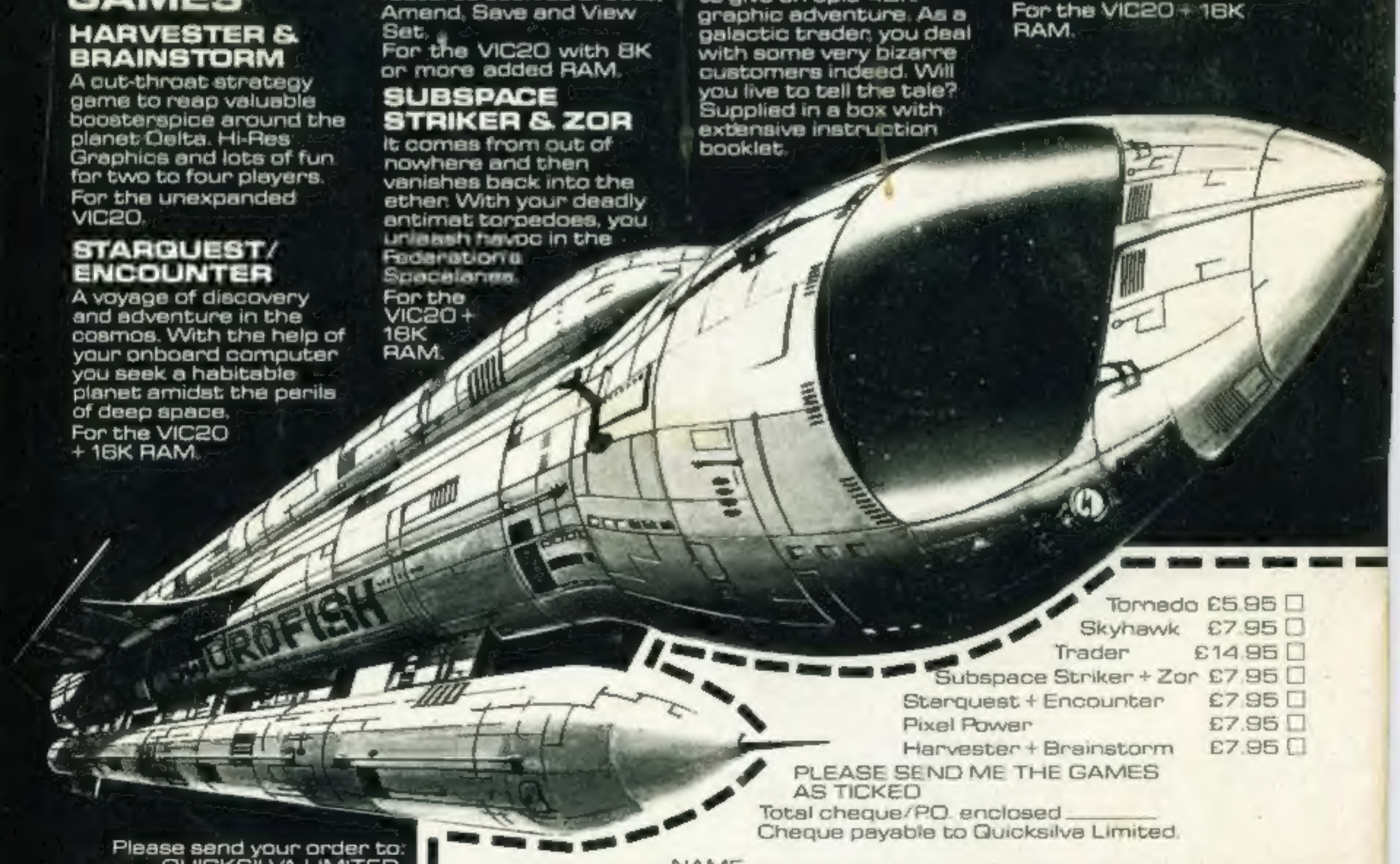

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